

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.95
Test oil : ISO 4113
Combination No. : 0 403 466 168
Injection pump
Pump designation : PES6MW100/120RS1238
EP type number : 0 413 406 237
Governor
Governor design. : RSV450...1000MW2A389
Governor no. : 0 420 085 269

Cust. part No. : 3929167

Customer-spec. information
Customer : CDC
Motor : 6 CT-830
Power KW : 134.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 450

Rack travel in mm : 6.50
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 28.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.60
Rated speed rpm : 1050
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1155
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1165

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 6.50
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.60
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 12.40
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.40
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 650
rack travel mm : 12.10
Tolerance mm : \pm 0.15

Pressure hPa : 550
rack travel mm : 11.70
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1050
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 450
rack travel mm : 6.50
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.95

Test oil : ISO 4113

Combination No. : 0 401 846 991

Injection pump

Pump designation : PE6P110A320RS3108-1

EP type number : 0 411 816 757

Governor

Governer design. : RQV250...1100PA920

: -10

Governer no. : 0 421 814 106

Cust. part No. : 425823 P02 RELEASED

Customer-spec. information

Customer : VOLVO-TRUCK

Motor : THD 102 KB

Power KW : 212.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 0 681 343 009

Opening pressure
bar

: 173.5

Tolerance bar : ± 1.5

A04

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.05

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.30

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 191.0

Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 4.0
Check tolerance	
cm ³ /1000S.	: 7.5
Rated speed rpm	: 250
Rack travel in mm	: 5.70
Tolerance mm	: ± 0.20
Del. quantity	
cm ³ /1000 strokes	: 32.0
Tolerance	
cm ³ /1000 strokes	: ± 2.0
Check tolerance	
cm ³ /1000S.	: ± 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes	: 3.0
Check tolerance	
cm ³ /1000S.	: 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 250
guide sleeve	
travel mm	: 1.19
Tolerance mm	: ± 0.25
Rated speed rpm	: 1146
guide sleeve	
travel mm	: 7.81
Tolerance mm	: ± 0.25
Rated speed rpm	: 1081
guide sleeve	
travel mm	: 6.83
Tolerance mm	: ± 0.25
Rated speed rpm	: 387
guide sleeve	
travel mm	: 2.96
Tolerance mm	: ± 0.25
Rated speed rpm	: 437
guide sleeve	
travel mm	: 3.71

Tolerance mm	: ± 0.25
Rated speed rpm	: 520
guide sleeve	
travel mm	: 4.67
Tolerance mm	: ± 0.25
Rated speed rpm	: 1370
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1175
Rack travel in mm	: 16.50
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm ³ /1000 strokes	: 191.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes	: 4.0
Check tolerance	
cm ³ /1000S.	: 7.5

CONTROL LEVER

control lever	
position degree	: 63.0
tolerance degree	: ± 4.0
control lever	
position degree	: 120.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 13.30
Rated speed rpm	: 1135
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1240
Tolerance 1/min	: ± 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 11.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.70
Tolerance mm : \pm 0.10

Rated speed rpm : 150

CRT mm min. : $>$ 6.70

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.15
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 960
rack travel mm : 3.80
Tolerance mm : \pm 0.15

A06

Pressure hPa : 240
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 113.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.30
Rated speed rpm : 1135
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 250
rack travel mm : 5.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.09.95
Test oil : ISO 4113

Combination No. : 0 401 876 312

Injection pump
Pump designation : PE6P110A32ORS492
EP type number : 0 411 816 161

Governor
Governor design. : RSV200...1100P1A305
: -6
Governor no. : 0 421 833 472

Cust. part No. : 847845 P05 v. 12/94

Customer-spec. information
Customer : VOLVO-PENTA
Motor : TD71APP
Power KW : 165.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.05
Tolerance mm : + 0.05

test only : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.30
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.55
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 110.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 200

Rack travel in mm : 5.50
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 54.0

control lever
position degree : 104.0

RATED SPEED

rack travel mm : 10.50
Rated speed rpm : 1115
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1155
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 67.0

control lever
position degree : 17.0

Setting point w/out bumper spring

Rated speed rpm : 200
rack travel mm : 5.00

Testing:

Rated speed rpm : 200
rack travel mm : 5.50
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 310
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.55
Tolerance mm : \pm 0.05

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1115
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 200
rack travel mm : 5.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.10.95
Test oil : ISO 4113

Combination No. : 0 401 876 322

Injection pump
Pump designation : PE6P110A320RS497
EP type number : 0 411 816 165

Governor
Governor design. : RSV200...1200P1A374
: -2
Governor no. : 0 421 833 205

Cust. part No. : 848719-P06

Customer-spec. information
Customer : VOLVO
Motor : TID 71A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 139.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 200

Rack travel in mm : 5.30
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 57.0
tolerance degree : + 4.0

control lever
position degree : 107.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 1215
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1275
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

control lever
position degree : 17.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
rack travel mm : 4.80

Testing:

Rated speed rpm : 200
rack travel mm : 5.30
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 310
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 380
rack travel mm : 10.10
Tolerance mm : \pm 0.10

Pressure hPa : 900
rack travel mm : 12.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1215
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50

Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 200
rack travel mm : 5.30
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.95

Test oil : ISO 4113

Combination No. : 0 401 876 761

Injection pump

Pump designation : PE6P120A320RS3206

EP type number : 0 411 826 773

Governor

Governer design. : RSV250...900P4A374

: -6

Governer no. : 0 421 833 283

Cust. part No. : 849623 P03 v. 6/95

Customer-spec. information

Customer : VOLVO-PENTA

Motor : TAMD122 A

Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration damper

(RoBo diaphragm) : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Test nozzle holde assembly

: 1 688 901 019

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.55

Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.75

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 276.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.10
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 276.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : + 4.0

control lever
position degree : 104.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 930
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1000
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1130

rack travel mm : 4.00
Rated speed rpm : 1010

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

control lever
position degree : 22.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 4.60

Testing:

Rated speed rpm : 250
rack travel mm : 5.10
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 410
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.75
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 1200
rack travel mm : 11.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 700
rack travel mm : 8.70
Tolerance mm : \pm 0.10

Rated speed rpm : 700

Pressure hPa : 770
rack travel mm : 11.40
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 8.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.70
Rated speed rpm : 930
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : \pm 0.10

LOW IDLE

Rated speed rpm : 250
rack travel mm : 5.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.10.95
Test oil : ISO 4113

Combination No. : 0 401 876 777

Injection pump
Pump designation : PE6P120A320RS3261
EP type number : 0 411 826 796

Governor
Governor design. : RSV250...1100POA374
: -11
Governor no. : 0 421 833 346

Cust. part No. : 864451 P04 v. 6/95

Customer-spec. information
Customer : PENTA
Motor : TAMD 102 A

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration
damper
(RoBo diaphragm) : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 260.0

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0
Rated speed rpm	: 250
Rack travel in mm	: 6.50
Tolerance mm	: + 0.20
Del. quantity	
cm3/1000 strokes	: 23.0
Tolerance	
cm3/1000 strokes	: + 3.0
Check tolerance	
cm3/1000S.	: + 6.0
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
governor spring	
pre-tension	
click setting x	: 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm3/1000 strokes	: 260.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	

Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 44.0
tolerance degree	: + 4.0

control lever	
position degree	: 94.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.10
Rated speed rpm	: 1145
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1210
Tolerance 1/min	: + 15

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1350

rack travel mm	: 4.00
Rated speed rpm	: 1220

LOW IDLE

control lever	
position degree	: 69.0
tolerance degree	: + 4.0

control lever	
position degree	: 19.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 250
rack travel mm	: 6.00

Testing:

Rated speed rpm	: 250
rack travel mm	: 6.50
Tolerance mm	: + 0.10

rack travel mm	: 2.00
Rated speed rpm	: 480

Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.15
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.15
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.10
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 1030
rack travel mm : 3.60
Tolerance mm : + 0.10

Pressure hPa : 140
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 11.10
Rated speed rpm : 1145
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.00
Tolerance mm : + 1.00

LOW IDLE

Rated speed rpm : 250
rack travel mm : 6.50
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.10.95
Test oil : ISO 4113

Combination No. : 0 401 876 803

Injection pump
Pump designation : PE6P110A320RS3266
EP type number : 0 411 816 777

Governor
Governor design. : RSV350...1250POA578
Governor no. : 0 421 833 434

Cust. part No. : 866200-P03 v. 4/94

Customer-spec. information
Customer : PENTA
Motor : TWD 630ME

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance cm ³ /1000S.	: + 3.0
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Spread Tolerance cm ³ /1000 strokes	: 5.0
--	-------

Check tolerance cm ³ /1000S.	: 9.0
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(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 800
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Rack travel in mm	: 0.50
Tolerance mm	: + 0.20

governor spring pre-tension click setting x	: 2.50
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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 133.0
Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 3.0
Spread Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 46.0
tolerance degree	: + 4.0

control lever position degree	: 96.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.00
Rated speed rpm	: 1270
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1305
Tolerance 1/min	: + 15

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1340

LOW IDLE

control lever position degree	: 68.0
tolerance degree	: + 4.0

control lever position degree	: 18.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 350
rack travel mm	: 5.60

Testing:

rack travel mm	: 2.00
Rated speed rpm	: 410
Tolerance 1/min	: + 30

SET IDLE AUXILIARY SPRING

rack travel mm	: 2.00
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ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm	: 500
Pressure hPa	: 1200
rack travel mm	: 12.00
Tolerance mm	: + 0.05

MEASUREMENT

Pressure hPa	: -
Rated speed rpm	: 500
rack travel mm	: 9.60
Tolerance mm	: + 0.20

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 1.90
Tolerance mm : \pm 0.10

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1270
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.10.95
Test oil : ISO 4113

Combination No. : 0 402 044 700

Injection pump
Pump designation : PES4P110A320RS3350
EP type number : 0 412 014 700

Governor
Governor design. : RQV350...1400PA1221K
Governor no. : 0 421 815 472

Cust. part No. : 16700-D8703 / M
 : -2004

Customer-spec. information

Customer : NMI
Motor : B4.40 EURO II
Power KW : 101.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 4- 2- 1- 3

Phasing : 0-90-180-270
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

*NW after s.o.d. : 180.00

Barrel no. : 4

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 15.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 178.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 9.50
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.46
Tolerance mm : + 0.20

Rated speed rpm : 1417
guide sleeve
travel mm : 9.99
Tolerance mm : + 0.15

Rated speed rpm : 994
guide sleeve
travel mm : 6.77
Tolerance mm : + 0.25

Rated speed rpm : 610
guide sleeve
travel mm : 3.96
Tolerance mm : + 0.25

Rated speed rpm : 1730
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1515

Rack travel in mm : 14.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : + 4.0

control lever
position degree : 122.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.40
Rated speed rpm : 1410
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1585
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1640

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

control lever
position degree : 26.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : $>$ 10.80

Rated speed rpm : 500

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 15.40
Tolerance mm : \pm 0.05

Rated speed rpm : 780
rack travel mm : 13.70
Tolerance mm : \pm 0.15

Rated speed rpm : 1000
rack travel mm : 14.30
Tolerance mm : \pm 0.20

Rated speed rpm : 1250
rack travel mm : 15.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1300
Pressure hPa : 1500
rack travel mm : 15.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1300
rack travel mm : 12.75
Tolerance mm : \pm 0.10

Rated speed rpm : 1300

Pressure hPa : 940
rack travel mm : 14.45
Tolerance mm : \pm 0.10

Pressure hPa : 520
rack travel mm : 13.25
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 270
Check
speed 1/min : $>$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 780
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.40
Rated speed rpm : 1410
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 9.50
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.10.95
Test oil : ISO 4113

Combination No. : 0 402 076 758

Injection pump
Pump designation : PES6P120A720RS3322
EP type number : 0 412 026 764

Governor
Governor design. : RSV650...125DP8A566
Governor no. : 0 421 833 415

Cust. part No. :

Customer-spec. information
Customer : FNH-GEOTECH
Power KW : 164.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 2.5

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 131.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 1.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 131.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : ± 4.0

RATED SPEED

Rated speed rpm : 1330

Rated speed rpm : 1293
rack travel mm : 9.05

Rated speed rpm : 1325
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1500

Rated speed rpm : 1294
rack travel mm : 9.05

Rated speed rpm : 1326
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1295
rack travel mm : 9.05

Rated speed rpm : 1327
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1296
rack travel mm : 9.05

Rated speed rpm : 1328
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1297
rack travel mm : 9.05

Rated speed rpm : 1329
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1298
rack travel mm : 9.05

Rated speed rpm : 1330
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

 rack travel mm : 0.85
 Tolerance mm : \pm 0.55

LOW IDLE

control lever
 position degree : 85.0
 tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
 rack travel mm : 4.30

Testing:

Rated speed rpm : 650
 rack travel mm : 4.80
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 770
 Tolerance 1/min : \pm 50

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 10.05
 Tolerance mm : \pm 0.05

Rated speed rpm : 900
 rack travel mm : 10.60
 Tolerance mm : \pm 0.10

Rated speed rpm : 1160
 rack travel mm : 10.35
 Tolerance mm : \pm 0.10

Rated speed rpm : 1250
 rack travel mm : 9.55
 Tolerance mm : \pm 0.05

Rated speed rpm : 700
 rack travel mm : 10.60
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

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Rated speed rpm : 500
 Pressure hPa : 1000
 rack travel mm : 10.60
 Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 rack travel mm : 7.60
 Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 560
 rack travel mm : 9.80
 Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 900
 Del. quantity
 cm³/1000 strokes : 144.5
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 83.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Del. quantity
 cm³/1000 strokes : 215.0
 Tolerance
 cm³/1000 strokes : \pm 15.0
 Check tolerance
 cm³/1000S. : \pm 19.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.10.95
Test oil : ISO 4113

Combination No. : 0 402 646 632

Injection pump
Pump designation : PE6P120A320RS7233
: -11
EP type number : 0 412 626 919

Governor
Governor design. : RQV300...1300PA1094K
Governor no. : 0 421 815 364

Cust. part No. : 866560 P03 v. 4/95

Customer-spec. information

Customer : PENTA
Motor : TAMD 72 A
Power KW : 316.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.65
Tolerance mm : ± 0.25

Rated speed rpm : 1345
guide sleeve
travel mm : 10.25
Tolerance mm : ± 0.25

Rated speed rpm : 899
guide sleeve
travel mm : 6.99
Tolerance mm : ± 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.54
Tolerance mm : ± 0.25

Rated speed rpm : 437
guide sleeve
travel mm : 3.05
Tolerance mm : ± 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 4.12
Tolerance mm : ± 0.25

Rated speed rpm : 1640
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 2400

Del. quantity
cm³/1000 strokes : 250.0
Tolerance

cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : ± 4.0

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1340
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1495
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 6.70

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 11.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : \pm 0.20

Rated speed rpm : 1200
rack travel mm : 13.70
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1300
Pressure hPa : 2400
rack travel mm : 13.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1300
rack travel mm : 7.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1300

Pressure hPa : 1580
rack travel mm : 5.90
Tolerance mm : \pm 0.10

Pressure hPa : 370
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2400
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : 2400
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 1340
Tolerance 1/min : \pm 5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.10.95
Test oil : ISO 4113
Combination No. : 0 402 646 665
Injection pump
Pump designation : PE6P130A720RS7354
EP type number : 0 412 636 835
Governor
Governor design. : RQV300...950PA1002
 : -3K
Governor no. : 0 421 815 491
Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8210.42K.300

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 076
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 075
Outside diameter : 8.0

806

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 5.05
Tolerance mm : ± 0.05
test only : ± 0.10
Rack travel in mm : 12.00
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50
Start of delivery mark
Check
tolerance °NW : ± 0.40
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950
Rack travel in mm : 12.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : + 0.20

Del. quantity
cm3/1000 strokes : 22.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.64
Tolerance mm : + 0.20

Rated speed rpm : 1025
guide sleeve
travel mm : 9.00
Tolerance mm : + 0.15

Rated speed rpm : 764
guide sleeve
travel mm : 6.22
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.78
Tolerance mm : + 0.25

Rated speed rpm : 1330
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1200

Rack travel in mm : 11.00
Tolerance mm : + 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950

Aneroid pressure
hPa : 900

Del. quantity
cm3/1000 strokes : 244.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 1015
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1015
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 6.30

Rated speed rpm : 355

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 11.50
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 10.90
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 900
rack travel mm : 12.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 950
rack travel mm : 8.50
Tolerance mm : \pm 0.20

Rated speed rpm : 950

Pressure hPa : 290
rack travel mm : 9.35
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 11.10
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $<$ 220
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 174.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1015
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.10.95
Test oil : ISO 4113
Combination No. : 0 403 466 176
Injection pump
Pump designation : PES6MW100/120RS1240
EP type number : 0 413 406 239
Governor
Governor design. : RSV450...1000MW2A396
Governor no. : 0 420 085 284

Cust. part No. : 3929174

Customer-spec. information
Customer : CDC
Motor : 6 CT-830
Power KW : 160.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.05

test only : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 400

Rack travel in mm : 5.50
Tolerance mm : + 0.50

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.40
Rated speed rpm : 1045
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1125

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1135

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 5.00
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.40
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 12.40
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.15

Pressure hPa : 600
rack travel mm : 11.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 5.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.95
Test oil : ISO 4113
Combination No. : 0 403 244 032A
Injection pump
Pump designation : PES4MW100/720RS1519
: -2
EP type number : 0 413 204 017
Governor
Governor design. : RQV300...1300MW132
: -1
Governor no. : 0 420 083 292
Cust. part No. : 0240741102

Customer spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1240

Rack travel in mm : 13.60
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 123.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000s. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : ± 0.20

Rated speed rpm : 1353
 guide sleeve
 travel mm : 7.02
 Tolerance mm : ± 0.15

Rated speed rpm : 1090
 guide sleeve
 travel mm : 5.21
 Tolerance mm : ± 0.25

Rated speed rpm : 790
 guide sleeve
 travel mm : 3.98
 Tolerance mm : ± 0.25

Rated speed rpm : 1759
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1870
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1240
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 123.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 111.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.60
 Rated speed rpm : 1285
 Tolerance 1/min : ± 10

rack travel mm : 4.00
 Rated speed rpm : 1445
 Tolerance 1/min : ± 5

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 3.90
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.70

TORQUE CONTROL

Rated speed rpm : 1240
rack travel mm : 13.60
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 13.60
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.60
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : ± 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 121.0
Tolerance

cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1285
Tolerance 1/min : ± 10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.95
Test oil : ISO 4113
Combination No. : 0 403 244 033A
Injection pump
Pump designation : PES4MW100/720RS1519
: -2
EP type number : 0 413 204 017
Governor
Governor design. : RQV300...1300MW132
: -1
Governor no. : 0 420 083 292
Cust. part No. : 0240748202

Customer-spec. information

Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1240
Rack travel in mm : 13.60
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 123.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000s. : ± 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : ± 0.20

Rated speed rpm : 1353
 guide sleeve
 travel mm : 7.02
 Tolerance mm : ± 0.15

Rated speed rpm : 1090
 guide sleeve
 travel mm : 5.21
 Tolerance mm : ± 0.25

Rated speed rpm : 790
 guide sleeve
 travel mm : 3.98
 Tolerance mm : ± 0.25

Rated speed rpm : 1759
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1870
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1240
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 123.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 111.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.60
 Rated speed rpm : 1285
 Tolerance 1/min : ± 10

rack travel mm : 4.00
 Rated speed rpm : 1445
 Tolerance 1/min : ± 5

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 3.90
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.70

TORQUE CONTROL

Rated speed rpm : 1240
rack travel mm : 13.60
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.60
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1285
Tolerance 1/min : \pm 10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.95
Test oil : ISO 4113

Combination No. : 0 403 244 034A

Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018

Governor
Governor design. : RQV300...1300MW132
: -3
Governor no. : 0 420 083 296

Cust. part No. : 0240740702

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.50
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1270

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 4.00
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Speed
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.91
Tolerance mm : \pm 0.20

Rated speed rpm : 1353
guide sleeve
travel mm : 7.02
Tolerance mm : \pm 0.15

Rated speed rpm : 1090
guide sleeve
travel mm : 5.21
Tolerance mm : \pm 0.25

Rated speed rpm : 790
guide sleeve
travel mm : 3.98
Tolerance mm : \pm 0.25

Rated speed rpm : 1759
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1870
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1270
Aneroid pressure
hPa : 700

Del. quantity
cm3/1000 strokes : 87.0
Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Speed
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : \pm 10

rack travel mm : 4.00
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : > 4.70

TORQUE CONTROL

Rated speed rpm : 1270
rack travel mm : 11.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : ± 10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.95
Test oil : ISO 4113
Combination No. : 0 403 244 035A
Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 017
Governor
Governor design. : RQV300...1300MW132
: -3
Governor no. : 0 420 083 292
Cust. part No. : 0240740802

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1270

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 87.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : ± 0.20

Rated speed rpm : 1353
 guide sleeve
 travel mm : 7.02
 Tolerance mm : ± 0.15

Rated speed rpm : 1090
 guide sleeve
 travel mm : 5.21
 Tolerance mm : ± 0.25

Rated speed rpm : 790
 guide sleeve
 travel mm : 3.98
 Tolerance mm : ± 0.25

Rated speed rpm : 1759
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1870
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1270
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 87.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 111.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1310
 Tolerance 1/min : ± 10

rack travel mm : 4.00
 Rated speed rpm : 1445
 Tolerance 1/min : ± 5

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 4.00
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.70

TORQUE CONTROL

Rated speed rpm : 1270
rack travel mm : 11.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1310
Tolerance 1/min : ± 10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.06.95
Test oil : ISO 4113
Combination No. : 0 403 476 142
Injection pump
Pump designation : PES6MW100/720RS1239
EP type number : 0 413 406 238
Governor
Governor design. : RSV750...1200MWOA372
Governor no. : 0 420 085 255

Cust. part No. : 0250748902

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 67.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.50
Tolerance mm : ± 0.25

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1450

rack travel mm : 4.00
Rated speed rpm : 1400

rack travel mm : 11.30
Rated speed rpm : 1250
Tolerance 1/min : ± 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240
Tolerance 1/min : mi 0
rack travel mm : 11.30

Rated speed rpm : 1370
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1241
Tolerance 1/min : mi 0
rack travel mm : 11.30

Rated speed rpm : 1371
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1242
Tolerance 1/min : mi 0
rack travel mm : 11.30

Rated speed rpm : 1372
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1243
Tolerance 1/min : mi 0
rack travel mm : 11.30

Rated speed rpm : 1373
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1248
Tolerance 1/min : mi 0
rack travel mm : 11.30

Rated speed rpm : 1378
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1249
Tolerance 1/min : mi 0
rack travel mm : 11.30

Rated speed rpm : 1379
Tolerance 1/min : +- 4
rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : +- 0.25

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.30
Tolerance mm : +- 0.05

Rated speed rpm : 600
rack travel mm : 12.30
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000s. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : +- 5.0
Check tolerance
cm³/1000s. : +- 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : +- 0.25
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000s. : +- 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.06.95
Test oil : ISO 4113
Combination No. : 0 403 476 143
Injection pump
Pump designation : PES6MW100/720RS1239
EP type number : 0 413 406 238
Governor
Governor design. : RSV750...1200MWA373
Governor no. : 0 420 085 256

Cust. part No. : 0260746002

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 62.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 47.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.50

Tolerance mm : ± 0.25

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring
pre-tension

click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 47.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 119.0

RATED SPEED

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1450

rack travel mm : 4.00

Rated speed rpm : 1370

rack travel mm : 9.30

Rated speed rpm : 1250

Tolerance 1/min : ± 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240

Tolerance 1/min : mi 0

rack travel mm : 9.30

Rated speed rpm : 1340

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1241

Tolerance 1/min : mi 0

rack travel mm : 9.30

Rated speed rpm : 1341

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1242

Tolerance 1/min : mi 0

rack travel mm : 9.30

Rated speed rpm : 1342

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1243

Tolerance 1/min : mi 0

rack travel mm : 9.30

Rated speed rpm : 1343

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1248

Tolerance 1/min : mi 0

rack travel mm : 9.30

Rated speed rpm : 1348

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1249

Tolerance 1/min : mi 0
rack travel mm : 9.30

Rated speed rpm : 1349
Tolerance 1/min : +- 4
rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : +- 0.25

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.30
Tolerance mm : +- 0.05

Rated speed rpm : 600
rack travel mm : 10.30
Tolerance mm : +- 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 28.0
Tolerance
cm3/1000 strokes : +- 1.5
Check tolerance
cm3/1000S. : +- 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 83.0

CO6

Tolerance
cm3/1000 strokes : +- 5.0
Check tolerance
cm3/1000S. : +- 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : +- 0.25
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000S. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.05.90
Test oil : ISO 4113
Combination No. : 0 400 836 016
Injection pump
Pump designation : PES6A85D410/3RS2415
EP type number : 0 410 886 915
Governor
Governor design. : RQV750AB1004L
Governor no. : 0 420 212 093

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : BF6L913
Power KW : 42.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 000
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

BASIC SETTING

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 752
guide sleeve
travel mm : 3.33
Tolerance mm : ± 0.25
Rated speed rpm : 530
guide sleeve
travel mm : -6.91

Tolerance mm : \pm 0.25
Rated speed rpm : 880
guide sleeve
travel mm : 17.51
Tolerance mm : \pm 0.25

Rated speed rpm : 825
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 880
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 800

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 720
Aneroid pressure
hPa : -

CONTROL LEVER

control lever
position degree : 87.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 737
rack travel mm : 11.00

Rated speed rpm : 778
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 798

Rated speed rpm : 738
rack travel mm : 11.00

Rated speed rpm : 779
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 739
rack travel mm : 11.00

Rated speed rpm : 780
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 740
rack travel mm : 11.00

Rated speed rpm : 781
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 741
rack travel mm : 11.00

Rated speed rpm : 792
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 742
rack travel mm : 11.00

Rated speed rpm : 793
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 660

Check
speed 1/min : > 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 36.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : ± 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.06.95
Test oil : ISO 4113
Combination No. : 0 400 844 094
Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0 410 894 029
Governor
Governor design. : RQV300...1400AB1065
: -12L
Governor no. : 0 420 212 207

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364
Power KW : 61.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

C10

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 10.55
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 59.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0
Rated speed rpm : 300
Rack travel in mm : 8.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 10.0

Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : + 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : + 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : + 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : + 0.10

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 59.5
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.0

CONTROL LEVER

control lever
 position degree : 116.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.50
 Rated speed rpm : 1445
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1550
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1700

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.70
 Tolerance mm : + 0.10

Rated speed rpm : 100
 CRT mm min. : > 10.20

Rated speed rpm : 610

TORQUE CONTROL

Dimension a mm : 1.00
 Rated speed rpm : 1400
 rack travel mm : 10.55
 Tolerance mm : + 0.05

Rated speed rpm : 475
 rack travel mm : 11.55
 Tolerance mm : + 0.05

Rated speed rpm : 850
 rack travel mm : 11.00
 Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 9.50
Rated speed rpm : 1445
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 8.70

Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.06.95
Test oil : ISO 4113
Combination No. : 0 400 844 098
Injection pump
Pump designation : PES4A95D410RS2809
EP type number : 0 410 894 993
Governor
Governor design. : RQV300...1400AB1065
 : -28L
Governor no. : 0 420 212 242

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364
Power KW : 65.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.95
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 65.5

Tolerance
cm3/1000 strokes : + 0.5

Check tolerance
cm3/1000S. : + 2.5

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 8.70
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 10.0

Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : + 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : + 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : + 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1450
 Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 65.5
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 115.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.90
 Rated speed rpm : 1455
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1550
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1670

LOW IDLE

control lever
 position degree : 77.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.70
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 9.60

Rated speed rpm : 625

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 9.95
 Tolerance mm : + 0.05

Rated speed rpm : 400
 rack travel mm : 11.15
 Tolerance mm : + 0.05

Rated speed rpm : 670
 rack travel mm : 10.80
 Tolerance mm : + 0.10

Rated speed rpm : 1060
rack travel mm : 10.35
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 49.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 8.90
Rated speed rpm : 1455
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 8.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.09.86
Test oil : ISO 4113
Combination No. : 0 400 846 336
Injection pump
Pump designation : PES6A90D410RS2293W
EP type number : 0 410 896 049
Governor
Governor design. : RQV300...1425AB740L
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM352
Power KW : 115.0

TEST BENCH REQUIREMENTS

Inlet line : 2.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.0

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 72.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1460
guide sleeve
travel mm : 8.50
Tolerance mm : ± 0.10

Rated speed rpm : 550
guide sleeve
travel mm : 2.85
Tolerance mm : ± 0.15

Rated speed rpm : 950
guide sleeve
travel mm : 5.35
Tolerance mm : ± 0.15

Rated speed rpm : 775
guide sleeve
travel mm : 4.35
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.45
Tolerance mm : ± 0.75

GUIDE SLEEVE POSITION

Rated speed rpm : 1420
Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 72.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.90
Rated speed rpm : 1460
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1575
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 68.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.60
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 9.10

Rated speed rpm : 445

TORQUE CONTROL

Rated speed rpm : 1400
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1460
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 76.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.10.92
Test oil : ISO 4113
Combination No. : 0 400 846 549
Injection pump
Pump designation : PES6A95D410RS2471
EP type number : 0 410 896 952
Governor
Governor design. : RQV300...1250AB1089
: -2L
Governor no. : 0 420 212 190

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : BF6L913C
Power KW : 141.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 102.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 7.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.35
Tolerance mm : ± 0.05

Rated speed rpm : 1290
guide sleeve
travel mm : 8.45
Tolerance mm : ± 0.05

Rated speed rpm : 650
guide sleeve
travel mm : 3.80
Tolerance mm : ± 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 7.00
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1290
Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 102.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed

C20

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.60
Rated speed rpm : 1295
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.30
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 9.00
Rated speed rpm : 418

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.65
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 11.70
Tolerance mm : ± 0.10

Rated speed rpm : 850

rack travel mm : 11.65
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1295
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 127.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.06.95
Test oil : ISO 4113
Combination No. : 0 400 874 218
Injection pump
Pump designation : PES4A90D410RS2294
EP type number : 0 410 894 011
Governor
Governor design. : RSV350...1400A0C2006
: L
Governor no. : 0 420 232 395

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 314
Power kW : 62.5

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1380
Rack travel in mm : 10.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 64.0
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Rated speed rpm : 350
Rack travel in mm : 9.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 27.0

Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 64.0
 Tolerance
 cm³/1000 strokes : + 0.5
 Check tolerance
 cm³/1000S. : + 2.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.5

CONTROL LEVER

control lever
 position degree : 115.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.40
 Rated speed rpm : 1425
 Tolerance 1/min : + 5
 rack travel mm : 4.40
 Rated speed rpm : 1498
 Tolerance 1/min : + 8
 rack travel mm : 1.00

Tolerance mm : + 0.70
 Rated speed rpm : 1600

LOW IDLE

control lever
 position degree : 83.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 9.30
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 560
 Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

Rated speed rpm : 650

CRT mm max. : < 1.00

TORQUE CONTROL

Rated speed rpm : 1380
 rack travel mm : 10.45
 Tolerance mm : + 0.05

Rated speed rpm : 600
 rack travel mm : 10.55
 Tolerance mm : + 0.10

BREAKAWAY

Rack travel in mm : 9.40
 Rated speed rpm : 1425
 Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 15.00
 Tolerance mm : + 0.30

LOW IDLE

Rated speed rpm : 350
rack travel mm : 9.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.07.95
Test oil : ISO 4113
Combination No. : 0 400 874 256
Injection pump
Pump designation : PES4A95D410RS2877
EP type number : 0 410 894 988
Governor
Governor design. : RSV350...1400A0C819L
Governor no. : 0 420 232 617

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364
Power KW : 65.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 72.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 350

Rack travel in mm : 8.30

Tolerance mm : ± 0.20

Del. quantity

cm³/1000 strokes : 12.0

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.5

Speed

Tolerance

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring

pre-tension

click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1380

Aneroid pressure

hPa : -

Del. quantity

cm³/1000 strokes : 72.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 111.0

tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1433

rack travel mm : 9.55

Rated speed rpm : 1488

Tolerance 1/min : ± 6

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1620

Rated speed rpm : 1434

rack travel mm : 9.55

Rated speed rpm : 1489

Tolerance 1/min : ± 6

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1620

Rated speed rpm : 1435

rack travel mm : 9.55

Rated speed rpm : 1490

Tolerance 1/min : ± 6

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1620

Rated speed rpm : 1436

rack travel mm : 9.55

Rated speed rpm : 1491

Tolerance 1/min : ± 6

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1620

Rated speed rpm : 1437

rack travel mm : 9.55

Rated speed rpm : 1492

Tolerance 1/min : ± 6

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1620

Rated speed rpm : 1438

rack travel mm : 9.55

Rated speed rpm : 1493

Tolerance 1/min : ± 6

rack travel mm : 4.00
rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1620

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 8.30
Tolerance mm : \pm 0.20

rack travel mm : 2.00
Rated speed rpm : 500

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 10.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 8.30
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.05.95
Test oil : ISO 4113
Combination No. : 0 401 846 471
Injection pump
Pump designation : PE6P100A720RS447
EP type number : 0 411 806 191
Governor
Governor design. : RQ225/1200PA617
Governor no. : 0 421 801 157

Cust. part No. : 0661514

Customer-spec. information
Customer : DAF
Motor : DHT 825
Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 119.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 225

Rack travel in mm : 5.40
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 225
guide sleeve
travel mm : 1.06
Tolerance mm : + 0.10

Rated speed rpm : 1247
guide sleeve
travel mm : 6.48
Tolerance mm : + 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 390
guide sleeve
travel mm : 3.78
Tolerance mm : + 0.10

Rated speed rpm : 520
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1400
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 650

Rack travel in mm : 16.00
Tolerance mm : + 0.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 119.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.45
Rated speed rpm : 1243
Tolerance 1/min : + 8

rack travel mm : 4.00
Rated speed rpm : 1315
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 225
rack travel mm : 5.40
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 385
Tolerance 1/min : + 20

Rated speed rpm : 125

CRT mm min. : > 6.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.45
Tolerance mm : + 0.05

Rated speed rpm : 1200
rack travel mm : 11.45
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 700
rack travel mm : 11.45
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 10.45
Tolerance mm : + 0.10

Rated speed rpm : 600

Pressure hPa : 315
rack travel mm : 11.15
Tolerance mm : + 0.05

Pressure hPa : 280
rack travel mm : 10.70
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 94.5
Tolerance
cm3/1000 strokes : + 1.0

D02

Check tolerance
cm3/1000s. : + 3.0

BREAKAWAY

Rack travel in mm : 10.45
Rated speed rpm : 1243
Tolerance 1/min : + 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm3/1000 strokes : 220.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : + 19.0

LOW IDLE

Rated speed rpm : 225
rack travel mm : 5.40
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Speed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.08.95
Test oil : ISO 4113

Combination No. : 0 401 846 962

Injection pump
Pump designation : PE6P120A320RS3189
EP type number : 0 411 826 759

Governor
Governor design. : RQ750PA783-3
Governor no. : 0 421 801 631

Cust. part No. : 864847 P03 v. 02/95

Customer-spec. information
Customer : PENTA
Motor : TWD 1010 G

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 260.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 757
guide sleeve
travel mm : 3.32
Tolerance mm : + 0.25

Rated speed rpm : 540
guide sleeve
travel mm : -6.04
Tolerance mm : + 0.25

Rated speed rpm : 890
guide sleeve
travel mm : 16.40
Tolerance mm : + 0.25

Rated speed rpm : 837
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 260.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 85.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 752
Tolerance 1/min : + 3

rack travel mm : 4.00
Rated speed rpm : 790
Tolerance 1/min : + 7

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 10.80

Rated speed rpm : 788
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 10.80

Rated speed rpm : 789
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 10.80

Rated speed rpm : 790
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 10.80

Rated speed rpm : 791
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 10.80

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 10.80

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.80
Tolerance mm : \pm 0.05

BREAKAWAY

Rack travel in mm : 10.80
Rated speed rpm : 752
Tolerance 1/min : \pm 3

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.95
Test oil : ISO 4113

Combination No. : 0 401 846 993

Injection pump
Pump designation : PE6P110A720RS3348
EP type number : 0 411 816 797

Governor
Governor design. : RQV250...1200PA413
: -8
Governor no. : 0 421 814 147

Cust. part No. : 612.60.08.0217

Customer-spec. information
Customer : SNF
Motor : WD612.36
Power KW : 135.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 210
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

D06

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.65
Tolerance mm : ± 0.50
Check
tolerance mm : ± 0.10

Rack travel in mm : 14.30
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 14.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 145.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 250

Rack travel in mm : 5.00
Tolerance mm : + 0.30

Del. quantity
cm3/1000 strokes : 12.0
Tolerance

cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Spread
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 0.44
Tolerance mm : + 0.20

Rated speed rpm : 1257
guide sleeve
travel mm : 7.36
Tolerance mm : + 0.15

Rated speed rpm : 1080
guide sleeve
travel mm : 6.04
Tolerance mm : + 0.25

Rated speed rpm : 740
guide sleeve
travel mm : 4.26
Tolerance mm : + 0.25

Rated speed rpm : 1458
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1570

D07

guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1390

Rack travel in mm : 12.80
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 700

Del. quantity
cm3/1000 strokes : 145.0
Tolerance

cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.30
Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1375
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 69.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 360
Tolerance 1/min : \pm 20

Rated speed rpm : 150

CRT mm min. : $>$ 6.50

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 14.30
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 14.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 320
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Pressure hPa : 410
rack travel mm : 13.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 139.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.30
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 14.0

LOW IDLE

Rated speed rpm : 250
rack travel mm : 5.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113

Combination No. : 0 402 646 785

Injection pump
Pump designation : PE6P120A320LS7869
EP type number : 0 412 626 887

Governor
Governor design. : RGV300...1050PA1078K
Governor no. : 0 421 815 359

Cust. part No. : 9275445

Customer-spec. information
Customer : LIEBHERR
Motor : D 9406 TI
Power KW : 300,0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 165
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 6- 3- 5- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 279.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0
Rated speed rpm	: 300
Rack travel in mm	: 6.10
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 50.0
Tolerance	
cm3/1000 strokes	: + 3.0
Check tolerance	
cm3/1000S.	: + 6.0
Spreed	
Tolerance	
cm3/1000 strokes	: 6.0
Check tolerance	
cm3/1000S.	: 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.69
Tolerance mm	: + 0.25
Rated speed rpm	: 1117
guide sleeve	
travel mm	: 10.38
Tolerance mm	: + 0.25
Rated speed rpm	: 746
guide sleeve	
travel mm	: 6.20
Tolerance mm	: + 0.25
Rated speed rpm	: 353
guide sleeve	
travel mm	: 2.45
Tolerance mm	: + 0.25
Rated speed rpm	: 403
guide sleeve	
travel mm	: 3.18
Tolerance mm	: + 0.25
Rated speed rpm	: 450
guide sleeve	
travel mm	: 3.66
Tolerance mm	: + 0.25

Rated speed rpm	: 1320
guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1185
Rack travel in mm	: 10.80
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure	
hPa	: 1550
Del. quantity	
cm3/1000 strokes	: 279.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 121.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.00
Rated speed rpm	: 1105
Tolerance 1/min	: + 5
rack travel mm	: 4.00
Rated speed rpm	: 1185
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 8.00

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.65
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 9.75
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 11.85
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 10.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1550
rack travel mm : 12.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1050
rack travel mm : 9.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1050

Pressure hPa : 725
rack travel mm : 10.70
Tolerance mm : \pm 0.05

Pressure hPa : 525
rack travel mm : 9.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1550
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1550
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1105
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.55
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.08.95
Test oil : ISO 4113
Combination No. : 0 402 648 797
Injection pump
Pump designation : PE8P120A320LS7873
EP type number : 0 412 628 880
Governor
Governor design. : RQ750PA1231
Governor no. : 0 421 801 791

Cust. part No. : 04222112KY0165-17

Customer-spec. information
Customer : KHD
Motor : BF8M1015/C
Power KW : 318.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 5- 4- 3

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance *NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 365.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.70
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 768
guide sleeve
travel mm : 6.28
Tolerance mm : ± 0.15

Rated speed rpm : 610
guide sleeve
travel mm : 0.52
Tolerance mm : ± 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 14.60
Tolerance mm : ± 0.15

Rated speed rpm : 866
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 930
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 365.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 900

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 12.30

Rated speed rpm : 780
Tolerance 1/min : ± 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 900

Rated speed rpm : 751
rack travel mm : 12.30

Rated speed rpm : 781
Tolerance 1/min : ± 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : ± 0.50

Rated speed rpm : 752
rack travel mm : 12.30

Rated speed rpm : 782
Tolerance 1/min : ± 4
rack travel mm : 5.50

rack travel mm : 0.50
Tolerance mm : ± 0.50

Rated speed rpm : 900
 Rated speed rpm : 753
 rack travel mm : 12.30
 Rated speed rpm : 783
 Tolerance 1/min : ± 4
 rack travel mm : 5.50
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 754
 rack travel mm : 12.30
 Rated speed rpm : 784
 Tolerance 1/min : ± 4
 rack travel mm : 5.50
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 900
 Rated speed rpm : 755
 rack travel mm : 12.30
 Rated speed rpm : 785
 Tolerance 1/min : ± 4
 rack travel mm : 5.50
 rack travel mm : 0.50
 Tolerance mm : ± 0.50

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 13.30
 Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 560
 Check
 speed 1/min : > 80
 Check
 speed 1/min : < 580

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.25
 Tolerance mm : ± 0.75
 Del. quantity
 cm³/1000 strokes : 205.0
 Tolerance
 cm³/1000 strokes : ± 20.0
 Check tolerance
 cm³/1000S. : ± 24.0

LOW IDLE

Rated speed rpm : 300
 rack travel mm : 4.70
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Speed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113

Combination No. : 0 402 678 826

Injection pump
Pump designation : PE8P120A320LS7878
EP type number : 0 412 628 906

Governor
Governor design. : RSV400...1000P1A589
Governor no. : 0 421 833 449

Cust. part No. : 9275722

Customer-spec. information
Customer : LIEBHERR
Motor : D 9308 TI
Power kW : 330.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 4.60
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 940
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1000
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1160

rack travel mm : 4.00
Rated speed rpm : 1020

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.40

Testing:

Rated speed rpm : 400
rack travel mm : 4.60
Tolerance mm : ± 0.20

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.30
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 13.30
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.90
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 12.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 233.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 940
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113
Combination No. : 0 402 678 826A
Injection pump
Pump designation : PE8P120A320LS7878
EP type number : 0 412 628 906
Governor
Governor design. : RSV400...1000P1A589
Governor no. : 0 421 833 449

Cust. part No. : 9275722

Customer-spec. information
Customer : LIEBHERR
Motor : D 9308 TI
Power KW : 330.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 4.60
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 940
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1000
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1160

rack travel mm : 4.00
Rated speed rpm : 1020

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.40

Testing:

Rated speed rpm : 400
rack travel mm : 4.60
Tolerance mm : + 0.20

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.30
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 13.30
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Pressure hPa : 850
rack travel mm : 12.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 233.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 940
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95

Test oil : ISO 4113

Combination No. : 0 402 678 826B

Injection pump

Pump designation : PE8P120A320LS7878

EP type number : 0 412 628 906

Governor

Governer design. : RSV400...1000P1A589

Governer no. : 0 421 833 449

Cust. part No. : 9275722

Customer-spec. information

Customer : LIEBHERR

Motor : D 9308 TI

Power KW : 330.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 105

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6

: - 3- 5- 4

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance *NW : ± 0.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.30

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 259.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000s. : ± 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 4.95
Tolerance mm : ± 0.20

Del. quantity
cm3/1000 strokes : 25.0

Tolerance
cm3/1000 strokes : ± 3.0

Check tolerance
cm3/1000S. : ± 6.0

Speed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 259.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 990

Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1065
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1075

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.75

Testing:

Rated speed rpm : 400
rack travel mm : 4.95
Tolerance mm : ± 0.20

rack travel mm : 2.00
Rated speed rpm : 440
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.30
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 13.30
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : ± 0.10

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 11.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 217.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 990
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 10.0

Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.95
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113

Combination No. : 0 402 746 954

Injection pump
Pump designation : PES6P120A720RS7301
EP type number : 0 412 726 900

Governor
Governor design. : RQV300...1050PA1090K
Governor no. : 0 421 815 362

Cust. part No. : 9275449

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance L/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 6.10
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.69
Tolerance mm : ± 0.15

Rated speed rpm : 1117
guide sleeve
travel mm : 10.38
Tolerance mm : ± 0.20

Rated speed rpm : 746
guide sleeve
travel mm : 6.20
Tolerance mm : ± 0.25

Rated speed rpm : 353
guide sleeve
travel mm : 2.45
Tolerance mm : ± 0.25

Rated speed rpm : 403
guide sleeve
travel mm : 3.18
Tolerance mm : ± 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.66
Tolerance mm : ± 0.25

Rated speed rpm : 1320
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1170

Rack travel in mm : 13.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1600

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.35
Rated speed rpm : 1080
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 79.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.10
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : $>$ 9.10

Rated speed rpm : 475

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.35
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.85
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 13.70
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 13.35
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.85
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1600
rack travel mm : 14.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1050
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 1050

Pressure hPa : 800
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Pressure hPa : 650
rack travel mm : 12.95
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 219.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 204.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BREAKAWAY

Rack travel in mm : 13.35
Rated speed rpm : 1080
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.85
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.05.95
Test oil : ISO 4113

Combination No. : 0 402 746 954A

Injection pump
Pump designation : PES6P120A720RS7301
EP type number : 0 412 726 900

Governor
Governor design. : RQV300...1050PA1090K
Governor no. : 0 421 815 362

Cust. part No. : 9275449

Customer-spec. information
Customer : LIEBHERR
Motor : D 926 TI
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 115
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 6.10
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.69
Tolerance mm : + 0.15

Rated speed rpm : 1117
guide sleeve
travel mm : 10.38
Tolerance mm : + 0.20

Rated speed rpm : 746
guide sleeve
travel mm : 6.20
Tolerance mm : + 0.25

Rated speed rpm : 353
guide sleeve
travel mm : 2.45
Tolerance mm : + 0.25

Rated speed rpm : 403
guide sleeve
travel mm : 3.18
Tolerance mm : + 0.25

Rated speed rpm : 450

guide sleeve
travel mm : 3.66
Tolerance mm : + 0.25

Rated speed rpm : 1320
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1170

Rack travel in mm : 13.00
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.35
Rated speed rpm : 1080
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.10
Tolerance mm : \pm 0.10

Rated speed rpm : 250

CRT mm min. : $>$ 9.10

Rated speed rpm : 475

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.35
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 13.85
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 13.70
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 13.35
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.85
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1400
rack travel mm : 14.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 1050
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 1050

Pressure hPa : 800
rack travel mm : 13.75
Tolerance mm : \pm 0.05

Pressure hPa : 650
rack travel mm : 12.95
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 219.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1600
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 204.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 13.35
Rated speed rpm : 1080
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.85
Tolerance mm : \pm 0.20
Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : \pm 10.0
Check tolerance
cm3/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.10
Tolerance mm : \pm 0.20
Del. quantity
cm3/1000 strokes : 25.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.95
Test oil : ISO 4113
Combination No. : 0 403 244 032
Injection pump
Pump designation : PES4MW100/720RS1519
: -2
EP type number : 0 413 204 017
Governor
Governor design. : RQV300...1300MW132
: -1
Governor no. : 0 420 083 292
Cust. part No. : 0240741102

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power kW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.60
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : \pm 0.10
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.5
 Spread
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.77
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1150
 guide sleeve
 travel mm : 5.95
 Tolerance mm : \pm 0.25
 Rated speed rpm : 629
 guide sleeve
 travel mm : 3.15
 Tolerance mm : \pm 0.25
 Rated speed rpm : 679
 guide sleeve
 travel mm : 3.45
 Tolerance mm : \pm 0.25
 Rated speed rpm : 820
 guide sleeve
 travel mm : 4.09
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1596
 guide sleeve
 travel mm : 12.00
 Tolerance mm : \pm 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 123.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 4.0
 Spread
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 116.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.60
 Rated speed rpm : 1345
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1460
 Tolerance 1/min : \pm 15
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.60
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.60
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.95
Test oil : ISO 4113
Combination No. : 0 403 244 033
Injection pump
Pump designation : PES4MW100/720RS1519
: -2
EP type number : 0 413 204 017
Governor
Governor design. : RQV300...1300MW132
: -1
Governor no. : 0 420 083 292
Cust. part No. : 0240748202

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 123.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + 0.25
 Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.77
 Tolerance mm : + 0.25
 Rated speed rpm : 1150
 guide sleeve
 travel mm : 5.95
 Tolerance mm : + 0.25
 Rated speed rpm : 629
 guide sleeve
 travel mm : 3.15
 Tolerance mm : + 0.25
 Rated speed rpm : 679
 guide sleeve
 travel mm : 3.45
 Tolerance mm : + 0.25
 Rated speed rpm : 820
 guide sleeve
 travel mm : 4.09
 Tolerance mm : + 0.25
 Rated speed rpm : 1596
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 123.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 4.0
 Spreed
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 116.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1460
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.60
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.60
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90

Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.04.95
Test oil : ISO 4113
Combination No. : 0 403 244 034
Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018
Governor
Governor design. : RQV300...1300MW132
: -3
Governor no. : 0 420 083 296
Cust. part No. : 0240740702

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.50
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 87.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 3.0
Speed
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : ± 0.25

Rated speed rpm : 1345
 guide sleeve
 travel mm : 7.64
 Tolerance mm : ± 0.25

Rated speed rpm : 1140
 guide sleeve
 travel mm : 5.88
 Tolerance mm : ± 0.25

Rated speed rpm : 629
 guide sleeve
 travel mm : 3.15
 Tolerance mm : ± 0.25

Rated speed rpm : 679
 guide sleeve
 travel mm : 3.53
 Tolerance mm : ± 0.25

Rated speed rpm : 800
 guide sleeve
 travel mm : 4.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1596
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 87.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 112.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1345
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1435
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.04.95
Test oil : ISO 4113
Combination No. : 0 403 244 035
Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018
Governor
Governor design. : RQV300...1300MW132
: -3
Governor no. : 0 420 083 296
Cust. part No. : 0240740802

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1345
 guide sleeve
 travel mm : 7.64
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1140
 guide sleeve
 travel mm : 5.88
 Tolerance mm : \pm 0.25
 Rated speed rpm : 629
 guide sleeve
 travel mm : 3.15
 Tolerance mm : \pm 0.25
 Rated speed rpm : 679
 guide sleeve
 travel mm : 3.53
 Tolerance mm : \pm 0.25
 Rated speed rpm : 800
 guide sleeve
 travel mm : 4.00
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1596
 guide sleeve
 travel mm : 12.00
 Tolerance mm : \pm 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 87.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 112.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1345
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1435
 Tolerance 1/min : \pm 15
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

E20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.04.95
Test oil : ISO 4113

Combination No. : 0 403 244 036

Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018

Governor
Governor design. : RQV300...1300MW132
: -5
Governor no. : 0 420 083 308

Cust. part No. : 0240740902

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.00
Tolerance mm : + 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 87.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000s. : + 3.0

Speed
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : ± 0.25
 Rated speed rpm : 1353
 guide sleeve
 travel mm : 7.76
 Tolerance mm : ± 0.25
 Rated speed rpm : 1140
 guide sleeve
 travel mm : 5.88
 Tolerance mm : ± 0.25
 Rated speed rpm : 629
 guide sleeve
 travel mm : 3.15
 Tolerance mm : ± 0.25
 Rated speed rpm : 679
 guide sleeve
 travel mm : 3.53
 Tolerance mm : ± 0.25
 Rated speed rpm : 800
 guide sleeve
 travel mm : 4.00
 Tolerance mm : ± 0.25
 Rated speed rpm : 1596
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 87.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 112.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1345
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1435
 Tolerance 1/min : ± 15
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.95
Test oil : ISO 4113

Combination No. : 0 403 244 036A

Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018

Governor
Governor design. : RQV300...1300MW132
: -5
Governor no. : 0 420 083 308

Cust. part No. : 0240740902

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1270

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 87.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + 0.20

Rated speed rpm : 1353
 guide sleeve
 travel mm : 7.02
 Tolerance mm : + 0.15

Rated speed rpm : 1090
 guide sleeve
 travel mm : 5.21
 Tolerance mm : + 0.25

Rated speed rpm : 790
 guide sleeve
 travel mm : 3.98
 Tolerance mm : + 0.25

Rated speed rpm : 1759
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25

Rated speed rpm : 1870
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1270
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 87.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 111.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1310
 Tolerance 1/min : + 10

rack travel mm : 4.00
 Rated speed rpm : 1445
 Tolerance 1/min : + 5

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 4.00
 Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 4.70

TORQUE CONTROL

Rated speed rpm : 1270
rack travel mm : 11.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1310
Tolerance 1/min : ± 10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.04.95
Test oil : ISO 4113

Combination No. : 0 403 244 038

Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018

Governor
Governor design. : RQV300...1200MW132
: -7
Governor no. : 0 420 083 312

Cust. part No. : 0250748302

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 87.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.92
 Tolerance mm : ± 0.25

Rated speed rpm : 1255
 guide sleeve
 travel mm : 7.93
 Tolerance mm : ± 0.25

Rated speed rpm : 671
 guide sleeve
 travel mm : 3.58
 Tolerance mm : ± 0.25

Rated speed rpm : 721
 guide sleeve
 travel mm : 4.06
 Tolerance mm : ± 0.25

Rated speed rpm : 970
 guide sleeve
 travel mm : 5.51
 Tolerance mm : ± 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 11.00
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 87.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 114.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.15
 Rated speed rpm : 1245
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1355
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1450

LOW IDLE

control lever
 position degree : 72.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 4.00
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.15
Rated speed rpm : 1245
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.06.95
Test oil : ISO 4113

Combination No. : 0 403 244 040

Injection pump
Pump designation : PES4MW100/720RS1519
: -2
EP type number : 0 413 204 017

Governor
Governor design. : RQV300...1200MW132
: -8
Governor no. : 0 420 083 313

Cust. part No. : 0250748502

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.92
 Tolerance mm : + 0.25

Rated speed rpm : 1255
 guide sleeve
 travel mm : 7.93
 Tolerance mm : + 0.25

Rated speed rpm : 671
 guide sleeve
 travel mm : 3.58
 Tolerance mm : + 0.25

Rated speed rpm : 721
 guide sleeve
 travel mm : 4.06
 Tolerance mm : + 0.25

Rated speed rpm : 970
 guide sleeve
 travel mm : 5.51
 Tolerance mm : + 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 10.00
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1400
 Del. quantity
 cm³/1000 strokes : 126.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 115.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.90
 Rated speed rpm : 1245
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1405
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 3.90
 Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 13.90
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 13.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 13.90
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : ± 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1245
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000s. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.06.95
Test oil : ISO 4113
Combination No. : 0 403 244 041
Injection pump
Pump designation : PES4MW100/720RS1519
: -2
EP type number : 0 413 204 017
Governor
Governor design. : RQV300...1200MW132
: -8
Governor no. : 0 420 083 313
Cust. part No. : 0250748602

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 13.90
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : \pm 0.20
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.5
 Spread
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.92
 Tolerance mm : \pm 0.25

Rated speed rpm : 1255
 guide sleeve
 travel mm : 7.93
 Tolerance mm : \pm 0.25

Rated speed rpm : 671
 guide sleeve
 travel mm : 3.58
 Tolerance mm : \pm 0.25

Rated speed rpm : 721
 guide sleeve
 travel mm : 4.06
 Tolerance mm : \pm 0.25

Rated speed rpm : 970
 guide sleeve
 travel mm : 5.51
 Tolerance mm : \pm 0.25

Rated speed rpm : 1690
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 10.00
 Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1400
 Del. quantity
 cm3/1000 strokes : 126.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 4.0
 Spread
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 115.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.90
 Rated speed rpm : 1245
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1405
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 3.90
 Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 13.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.06.95
Test oil : ISO 4113
Combination No. : 0 403 244 045
Injection pump
Pump designation : PES4MW100/720RS1524
EP type number : 0 413 204 021
Governor
Governor design. : RQV300...1300MW132
: -12
Governor no. : 0 420 083 329
Cust. part No. : 0240740902

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 21.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.00
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 89.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000s. : 7.0

Rated speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.91
Tolerance mm : \pm 0.25

Rated speed rpm : 1353
guide sleeve
travel mm : 7.14
Tolerance mm : \pm 0.25

Rated speed rpm : 1130
guide sleeve
travel mm : 5.40
Tolerance mm : \pm 0.25

Rated speed rpm : 610
guide sleeve
travel mm : 2.96
Tolerance mm : \pm 0.25

Rated speed rpm : 660
guide sleeve
travel mm : 3.31
Tolerance mm : \pm 0.25

Rated speed rpm : 780
guide sleeve
travel mm : 3.72
Tolerance mm : \pm 0.25

Rated speed rpm : 1679
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1780

guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 10.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 89.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1445
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.90
Tolerance mm : \pm 0.10

Pressure hPa : 150
rack travel mm : 0.30
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.95
Test oil : ISO 4113

Combination No. : 0 403 244 045A

Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018

Governor
Governor design. : RQV300...1300MW132
: -3
Governor no. : 0 420 083 296

Cust. part No. : 0240740802

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1270

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 87.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
 cm³/1000S. : 7.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : ± 0.20

Rated speed rpm : 1353
 guide sleeve
 travel mm : 7.02
 Tolerance mm : ± 0.15

Rated speed rpm : 1090
 guide sleeve
 travel mm : 5.21
 Tolerance mm : ± 0.25

Rated speed rpm : 790
 guide sleeve
 travel mm : 3.98
 Tolerance mm : ± 0.25

Rated speed rpm : 1759
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1870
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1270
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 87.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 111.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.10
 Rated speed rpm : 1345
 Tolerance 1/min : ± 10

rack travel mm : 4.00
 Rated speed rpm : 1445
 Tolerance 1/min : ± 5

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 4.00
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.70

TORQUE CONTROL

Rated speed rpm : 1270
rack travel mm : 11.15
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 11.15
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.15
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : ± 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.20
Tolerance mm : ± 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 10.10
Rated speed rpm : 1345
Tolerance 1/min : ± 10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.05.95
Test oil : ISO 4113
Combination No. : 0 403 244 046
Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0 413 204 022
Governor
Governor design. : RQV300...1300MW132
: -13
Governor no. : 0 420 083 330
Cust. part No. : 0260746202

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 119.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : + 0.25
 Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.15
 Tolerance mm : + 0.25
 Rated speed rpm : 1130
 guide sleeve
 travel mm : 5.40
 Tolerance mm : + 0.25
 Rated speed rpm : 610
 guide sleeve
 travel mm : 2.96
 Tolerance mm : + 0.25
 Rated speed rpm : 660
 guide sleeve
 travel mm : 3.31
 Tolerance mm : + 0.25
 Rated speed rpm : 780
 guide sleeve
 travel mm : 3.72
 Tolerance mm : + 0.25
 Rated speed rpm : 1679
 guide sleeve
 travel mm : 12.00
 Tolerance mm : + 0.25

Rated speed rpm : 1780
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1445
 Rack travel in mm : 10.00
 Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 119.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 113.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.30
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 3.70
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 1.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90

Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.05.95
Test oil : ISO 4113
Combination No. : 0 403 244 047
Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0 413 204 022
Governor
Governor design. : RQV300...1300MW132
: -13
Governor no. : 0 420 083 330
Cust. part No. : 0260746302

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power kW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 8.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : ± 0.25
 Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.15
 Tolerance mm : ± 0.25
 Rated speed rpm : 1130
 guide sleeve
 travel mm : 5.40
 Tolerance mm : ± 0.25
 Rated speed rpm : 610
 guide sleeve
 travel mm : 2.96
 Tolerance mm : ± 0.25
 Rated speed rpm : 660
 guide sleeve
 travel mm : 3.31
 Tolerance mm : ± 0.25
 Rated speed rpm : 780
 guide sleeve
 travel mm : 3.72
 Tolerance mm : ± 0.25
 Rated speed rpm : 1679
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1780
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1445
 Rack travel in mm : 10.00
 Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 119.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 113.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30
 Rated speed rpm : 1345
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : ± 15
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 3.70
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 1.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90

Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.06.95
Test oil : ISO 4113
Combination No. : 0 403 244 048
Injection pump
Pump designation : PES4MW100/720RS1524
EP type number : 0 413 204 021
Governor
Governor design. : RQV300...1300MW132
: -12
Governor no. : 0 420 083 329
Cust. part No. : 0240741002

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

G02

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 89.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.91
Tolerance mm : \pm 0.20

Rated speed rpm : 1353
guide sleeve
travel mm : 7.14
Tolerance mm : \pm 0.15

Rated speed rpm : 1130
guide sleeve
travel mm : 5.40
Tolerance mm : \pm 0.25

Rated speed rpm : 610
guide sleeve
travel mm : 2.96
Tolerance mm : \pm 0.25

Rated speed rpm : 660
guide sleeve
travel mm : 3.31
Tolerance mm : \pm 0.25

Rated speed rpm : 780
guide sleeve
travel mm : 3.72
Tolerance mm : \pm 0.25

Rated speed rpm : 1679
guide sleeve
travel mm : 12.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1780

guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 10.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 89.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1445
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 5.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.90
Tolerance mm : \pm 0.10

Pressure hPa : 150
rack travel mm : 0.30
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

G04

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.04.95
Test oil : ISO 4113
Combination No. : 0 403 246 035
Injection pump
Pump designation : PES6MW100/72ORS1517
: -3
EP type number : 0 413 206 020
Governor
Governor design. : RQV300...1300MW132
: -2
Governor no. : 0 420 083 293
Cust. part No. : 0240744202

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 20.00
Tolerance mm : + 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.25
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 95.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Speed

Tolerance	
cm3/1000 strokes :	4.5
<hr/>	
Check tolerance	
cm3/1000S. :	7.0
Rated speed rpm :	300
Rack travel in mm :	3.50
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	12.0
Tolerance	
cm3/1000 strokes :	+ 2.0
Check tolerance	
cm3/1000S. :	+ 4.5
Spread	
Tolerance	
cm3/1000 strokes :	2.0
Check tolerance	
cm3/1000S. :	4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	300
guide sleeve	
travel mm :	1.02
Tolerance mm :	+ 0.25
Rated speed rpm :	1353
guide sleeve	
travel mm :	6.70
Tolerance mm :	+ 0.25
Rated speed rpm :	1100
guide sleeve	
travel mm :	4.76
Tolerance mm :	+ 0.25
Rated speed rpm :	490
guide sleeve	
travel mm :	2.25
Tolerance mm :	+ 0.25
Rated speed rpm :	540
guide sleeve	
travel mm :	2.50
Tolerance mm :	+ 0.25
Rated speed rpm :	710
guide sleeve	
travel mm :	3.03
Tolerance mm :	+ 0.25
Rated speed rpm :	1683

guide sleeve	
travel mm :	12.00
Tolerance mm :	+ 0.25
Rated speed rpm :	1780
guide sleeve	
travel mm :	13.50
Tolerance mm :	+ 0.50

GUIDE SLEEVE POSITION

Rated speed rpm :	1400
Rack travel in mm :	13.00
Tolerance mm :	+ 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1300
Aneroid pressure	
hPa :	1000
Del. quantity	
cm3/1000 strokes :	95.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 3.0
Spread	
Tolerance	
cm3/1000 strokes :	4.5
Check tolerance	
cm3/1000S. :	7.0

CONTROL LEVER

control lever	
position degree :	116.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.20
Rated speed rpm :	1345
Tolerance 1/min :	+ 5
rack travel mm :	4.00
Rated speed rpm :	1460
Tolerance 1/min :	+ 15
rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1550

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.20

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 11.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 1.45
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.75
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

G08

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300

rack travel mm : 3.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.06.95
Test oil : ISO 4113
Combination No. : 0 403 246 036
Injection pump
Pump designation : PES6MW100/720RS1517
: -2
EP type number : 0 413 206 019
Governor
Governor design. : RQV300...1300MW132
: -4
Governor no. : 0 420 083 299
Cust. part No. : 0240744402

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.30
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 118.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000S. : ± 3.0
Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 3.80
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.02
Tolerance mm : ± 0.25

Rated speed rpm : 1353
guide sleeve
travel mm : 6.70
Tolerance mm : ± 0.25

Rated speed rpm : 1100
guide sleeve
travel mm : 4.76
Tolerance mm : ± 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 2.25
Tolerance mm : ± 0.25

Rated speed rpm : 540
guide sleeve
travel mm : 2.50
Tolerance mm : ± 0.25

Rated speed rpm : 710
guide sleeve
travel mm : 3.03
Tolerance mm : ± 0.25

Rated speed rpm : 1683

guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1780
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 13.00
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 4.50

Rated speed rpm : 490
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 3.00
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.0
Speed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.80
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.04.95
Test oil : ISO 4113
Combination No. : 0 403 246 043
Injection pump
Pump designation : PES6MW100/720RS1523
EP type number : 0 413 206 024
Governor
Governor design. : RQV300...1300MW148
Governor no. : 0 420 083 321
Cust. part No. : 0250744302

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 21.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 11.40
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 98.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 3.0
Spreed
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
 cm3/1000S. : 7.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : \pm 0.20
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.5
 Spread
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.92
 Tolerance mm : \pm 0.25

Rated speed rpm : 1354
 guide sleeve
 travel mm : 9.32
 Tolerance mm : \pm 0.25

Rated speed rpm : 1077
 guide sleeve
 travel mm : 7.05
 Tolerance mm : \pm 0.25

Rated speed rpm : 514
 guide sleeve
 travel mm : 2.14
 Tolerance mm : \pm 0.25

Rated speed rpm : 564
 guide sleeve
 travel mm : 2.60
 Tolerance mm : \pm 0.25

Rated speed rpm : 740
 guide sleeve
 travel mm : 3.93
 Tolerance mm : \pm 0.25

Rated speed rpm : 1720
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm3/1000 strokes : 98.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 3.0
 Spread
 Tolerance
 cm3/1000 strokes : 4.5
 Check tolerance
 cm3/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 118.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.40
 Rated speed rpm : 1345
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1455
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.70

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.40
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 1.40
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.04.95
Test oil : ISO 4113
Combination No. : 0 403 246 049
Injection pump
Pump designation : PES6MW100/720RS1523
EP type number : 0 413 206 024
Governor
Governor design. : RQV300...1200MW148
: -6
Governor no. : 0 420 083 327
Cust. part No. : 0250745002

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.40
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 96.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spread
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
 cm3/1000S. : 7.0
 Rated speed rpm : 300
 Rack travel in mm : 4.00
 Tolerance mm : \pm 0.20
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.92
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1214
 guide sleeve
 travel mm : 8.08
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1031
 guide sleeve
 travel mm : 6.74
 Tolerance mm : \pm 0.25
 Rated speed rpm : 514
 guide sleeve
 travel mm : 2.14
 Tolerance mm : \pm 0.25
 Rated speed rpm : 564
 guide sleeve
 travel mm : 2.60
 Tolerance mm : \pm 0.25
 Rated speed rpm : 740
 guide sleeve
 travel mm : 3.93
 Tolerance mm : \pm 0.25
 Rated speed rpm : 1720
 guide sleeve
 travel mm : 13.50
 Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 10.00
 Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm3/1000 strokes : 96.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 4.5
 Check tolerance
 cm3/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 118.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.40
 Rated speed rpm : 1245
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1375
 Tolerance 1/min : \pm 15
 rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 4.70

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.40
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 1.40
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.70
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.40
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.06.95
Test oil : ISO 4113
Combination No. : 0 403 444 144
Injection pump
Pump designation : PES4MW100/720RS1151
EP type number : 0 413 404 104
Governor
Governor design. : RQV300...1300MW67-7
Governor no. : 0 420 083 278

Cust. part No. : 0230745902

Customer-spec. information
Customer : MB-NFZ
Motor : OM364A
Power KW : 79.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 83.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm3/1000S. : 6.0
 Rated speed rpm : 300
 Rack travel in mm : 6.40
 Tolerance mm : + 0.20
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.40
 Tolerance mm : + 0.25
 Rated speed rpm : 477
 guide sleeve
 travel mm : 2.85
 Tolerance mm : + 0.25
 Rated speed rpm : 490
 guide sleeve
 travel mm : 2.93
 Tolerance mm : + 0.25
 Rated speed rpm : 1600
 guide sleeve
 travel mm : 11.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1435
 Rack travel in mm : 9.80
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700

Del. quantity
 cm3/1000 strokes : 83.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 112.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.80
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1435
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 6.40
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 510
 Tolerance 1/min : + 30
 Rated speed rpm : 200
 CRT mm min. : > 8.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 11.65
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 11.65
Tolerance mm : \pm 0.10

Rated speed rpm : 1175
rack travel mm : 11.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.65
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.75
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 300
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Pressure hPa : 150
rack travel mm : 10.40
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.04.95
Test oil : ISO 4113
Combination No. : 0 403 444 151
Injection pump
Pump designation : PES4MW100/720RS1235
EP type number : 0 413 404 121
Governor
Governor design. : RQV300...1300MW139
Governor no. : 0 420 083 304

Cust. part No. : 0250742602

Customer-spec. information
Customer : MB-NFZ
Motor : OM364A
Power KW : 79.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm3/1000S. : 6.0
 Rated speed rpm : 300
 Rack travel in mm : 7.80
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spread
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.27
 Tolerance mm : + 0.25
 Rated speed rpm : 1354
 guide sleeve
 travel mm : 10.31
 Tolerance mm : + 0.25
 Rated speed rpm : 894
 guide sleeve
 travel mm : 6.18
 Tolerance mm : + 0.25
 Rated speed rpm : 390
 guide sleeve
 travel mm : 2.39
 Tolerance mm : + 0.25
 Rated speed rpm : 440
 guide sleeve
 travel mm : 3.01
 Tolerance mm : + 0.25
 Rated speed rpm : 510
 guide sleeve
 travel mm : 3.56
 Tolerance mm : + 0.25
 Rated speed rpm : 1600
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1430
 Rack travel in mm : 10.00
 Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm3/1000 strokes : 90.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spread
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 118.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.15
 Rated speed rpm : 1345
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1455
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 9.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 1.00
Tolerance mm : \pm 0.10

Pressure hPa : 150
rack travel mm : 0.40
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80

Check
speed 1/min : $<$ 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.15
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.95
Test oil : ISO 4113
Combination No. : 0 403 446 177
Injection pump
Pump designation : PES6MW100/720RS1144
EP type number : 0 413 406 138
Governor
Governor design. : RQV300...1300MW48
Governor no. : 0 420 083 066

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM366A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 78.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 7.90
Tolerance mm : \pm 0.20

Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.37
Tolerance mm : \pm 0.20

Rated speed rpm : 1354
guide sleeve
travel mm : 8.65
Tolerance mm : \pm 0.15

Rated speed rpm : 885
guide sleeve
travel mm : 5.01
Tolerance mm : \pm 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 2.86
Tolerance mm : \pm 0.25

Rated speed rpm : 1610
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1440

Rack travel in mm : 10.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 78.0
Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1440
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.90
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.70

Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.05
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 585
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 1100
rack travel mm : 11.20
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 230

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 585
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.95
Test oil : ISO 4113
Combination No. : 0 403 446 216
Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138
Governor
Governor design. : RQV300...1400MW48-8
Governor no. : 0 420 083 175

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 715 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance  : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.75
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 78.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 300
 Rack travel in mm : 7.90
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.22
 Tolerance mm : ± 0.20
 Rated speed rpm : 1453
 guide sleeve
 travel mm : 8.30
 Tolerance mm : ± 0.15
 Rated speed rpm : 594
 guide sleeve
 travel mm : 3.30
 Tolerance mm : ± 0.25
 Rated speed rpm : 400
 guide sleeve
 travel mm : 2.30
 Tolerance mm : ± 0.25
 Rated speed rpm : 1770
 guide sleeve
 travel mm : 11.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1590
 Rack travel in mm : 9.75
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 78.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 111.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.70
 Rated speed rpm : 1445
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1550
 Tolerance 1/min : ± 15
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1650

LOW IDLE

control lever
 position degree : 80.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.90
 Tolerance mm : ± 0.10
 Rated speed rpm : 100
 CRT mm min. : > 10.00

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1200
rack travel mm : 10.95
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 200

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 230

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 9.70
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.04.95
Test oil : ISO 4113
Combination No. : 0 403 446 217
Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138
Governor
Governor design. : RQV300...1300MW48-9
Governor no. : 0 420 083 176

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM366A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder assembly : 1 688 901 101

Opening pressure bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05
Check tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.05
Tolerance mm : + 0.05

Del. quantity cm³/1000 strokes : 78.0

Tolerance cm³/1000 strokes : + 1.0

Check tolerance cm³/1000s. : + 3.0

Speed
Tolerance cm³/1000 strokes : 3.5

Check tolerance
 cm3/1000S. : 6.0
 Rated speed rpm : 300
 Rack travel in mm : 7.90
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 11.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1440
 guide sleeve
 travel mm : 9.50
 Tolerance mm : + 0.20

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.40
 Tolerance mm : + 0.20

Rated speed rpm : 1350
 guide sleeve
 travel mm : 8.70
 Tolerance mm : + 0.10

Rated speed rpm : 500
 guide sleeve
 travel mm : 3.00
 Tolerance mm : + 0.30

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
 hPa : -
 Del. quantity
 cm3/1000 strokes : 78.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 100.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.00
 Rated speed rpm : 1345
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1440
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 70.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 7.90
 Tolerance mm : + 0.10

Rated speed rpm : 100
 CRT mm min. : > 9.50

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 11.05

Tolerance mm : + 0.05

Rated speed rpm : 800

rack travel mm : 11.95

Tolerance mm : + 0.15

Rated speed rpm : 585

rack travel mm : 12.10

Tolerance mm : + 0.10

Rated speed rpm : 1100

rack travel mm : 11.10

Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100

Rated speed rpm : < 230

Check
speed 1/min : > 80

Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 800

Del. quantity

cm³/1000 strokes : 75.0

Tolerance

cm³/1000 strokes : + 1.5

Check tolerance

cm³/1000S. : + 4.0

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 7.0

Aneroid pressure

hPa : -

Rated speed rpm : 585

Del. quantity

cm³/1000 strokes : 69.0

Tolerance

cm³/1000 strokes : + 1.5

Check tolerance

cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 10.00

Rated speed rpm : 1345

H10

Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm³/1000 strokes : 83.0

Tolerance

cm³/1000 strokes : + 5.0

Check tolerance

cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 300

rack travel mm : 7.90

Tolerance mm : + 0.10

Del. quantity

cm³/1000 strokes : 11.0

Tolerance

cm³/1000 strokes : + 2.0

Check tolerance

cm³/1000S. : + 4.5

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.07.95
Test oil : ISO 4113
Combination No. : 0 403 446 249
Injection pump
Pump designation : PES6MW100/720RS1197
EP type number : 0 413 406 185
Governor
Governor design. : RQV325...1350MW109K
Governor no. : 0 420 083 997

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8060.45.6000
Power KW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1350

Rack travel in mm : 14.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 102.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance cm3/1000S.	: 6.0
Rated speed rpm	: 325
Rack travel in mm	: 7.80
Tolerance mm	: + 0.20
Del. quantity cm3/1000 strokes	: 27.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000S.	: + 4.5
Speed Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 325
guide sleeve travel mm	: 1.90
Tolerance mm	: + 0.25
Rated speed rpm	: 1411
guide sleeve travel mm	: 10.31
Tolerance mm	: + 0.25
Rated speed rpm	: 832
guide sleeve travel mm	: 5.05
Tolerance mm	: + 0.25
Rated speed rpm	: 346
guide sleeve travel mm	: 2.27
Tolerance mm	: + 0.25
Rated speed rpm	: 396
guide sleeve travel mm	: 3.13
Tolerance mm	: + 0.25
Rated speed rpm	: 380
guide sleeve travel mm	: 3.01
Tolerance mm	: + 0.25
Rated speed rpm	: 1640
guide sleeve travel mm	: 13.50

Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1475
Rack travel in mm	: 13.00
Tolerance mm	: + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1350
Aneroid pressure hPa	: 850
Del. quantity cm3/1000 strokes	: 102.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 3.0
Speed Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 120.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 13.00
Rated speed rpm	: 1425
Tolerance 1/min	: + 5
rack travel mm	: 4.00
Rated speed rpm	: 1535
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1650

LOW IDLE

control lever position degree	: 82.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 10.00

TORQUE CONTROL

Rated speed rpm : 1350
rack travel mm : 14.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 13.70
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.35
Tolerance mm : \pm 0.15

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 850
rack travel mm : 13.50
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 12.95
Tolerance mm : \pm 0.15

Pressure hPa : 350
rack travel mm : 12.00
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 265

Check
speed 1/min : $>$ 275

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 850
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 102.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : 850
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : 850
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1425
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

WARM-START DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

COLD-START DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 7.80
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.06.95
Test oil : ISO 4113

Combination No. : 0 403 446 280

Injection pump
Pump designation : PES6MW100/720RS1131
: -1
EP type number : 0 413 406 165

Governor
Governor design. : RQV300...1300MW50
: -19
Governor no. : 0 420 083 245

Cust. part No. : 0210742202

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.15
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 100.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 6.50
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1360
guide sleeve
travel mm : 8.64
Tolerance mm : \pm 0.25

Rated speed rpm : 2240
guide sleeve
travel mm : 24.82
Tolerance mm : \pm 0.25

Rated speed rpm : 721
guide sleeve
travel mm : 5.69
Tolerance mm : \pm 0.25

Rated speed rpm : 771
guide sleeve
travel mm : 6.11
Tolerance mm : \pm 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 7.14
Tolerance mm : \pm 0.25

Rated speed rpm : 1485

guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 100.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.10
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1475
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.15
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.15
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 12.55
Tolerance mm : \pm 0.15

Pressure hPa : 200
rack travel mm : 11.25
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100

H17

Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80

Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000

Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 92.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 43.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.10

Rated speed rpm : 1350

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 105.0

Tolerance
cm³/1000 strokes : \pm 5.0

Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.95
Test oil : ISO 4113
Combination No. : 0 403 446 303
Injection pump
Pump designation : PES6MW100/720RS1131
: -1
EP type number : 0 413 406 165
Governor
Governor design. : RQV300...1300MW50
: -25
Governor no. : 0 420 083 271
Cust. part No. : 0220745302

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power kW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 12.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0
Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 7.15
Tolerance mm : + 0.20

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.40
Tolerance mm : + 0.25

Rated speed rpm : 1354
guide sleeve
travel mm : 8.68
Tolerance mm : + 0.25

Rated speed rpm : 881
guide sleeve
travel mm : 5.02
Tolerance mm : + 0.25

Rated speed rpm : 363
guide sleeve
travel mm : 2.05
Tolerance mm : + 0.25

Rated speed rpm : 413
guide sleeve
travel mm : 2.44
Tolerance mm : + 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 2.99
Tolerance mm : + 0.25

Rated speed rpm : 1600

H2O

guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1400

Rack travel in mm : 10.00
Tolerance mm : + 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 96.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.95
Rated speed rpm : 1345
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1470
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 80.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.15
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 8.20

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.95
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 1.70
Tolerance mm : \pm 0.15

Pressure hPa : 200
rack travel mm : 0.40
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.95
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 7.15
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.06.95
Test oil : ISO 4113
Combination No. : 0 403 446 319
Injection pump
Pump designation : PES6MW100/320RS1216
: -1
EP type number : 0 413 406 223
Governor
Governor design. : RQV275...1250MW124K
Governor no. : 0 420 083 989

Cust. part No. :

Customer-spec. information

Customer : RVI
Motor : MIDR 060226 U
Power kW : 110.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.25

Rack travel in mm : 13.25
Tolerance mm : ± 0.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 275

Rack travel in mm : -7.20
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 21.0
Tolerance

cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.00
Tolerance mm : + 0.25

Rated speed rpm : 1344
guide sleeve
travel mm : 9.99
Tolerance mm : + 0.25

Rated speed rpm : 924
guide sleeve
travel mm : 6.77
Tolerance mm : + 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 2.39
Tolerance mm : + 0.25

Rated speed rpm : 440
guide sleeve
travel mm : 3.01
Tolerance mm : + 0.25

Rated speed rpm : 550

H24

guide sleeve
travel mm : 3.92
Tolerance mm : + 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1350

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 106.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 300.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1310
Tolerance 1/min : + 15

rack travel mm : -9.25
Rated speed rpm : 1465
Tolerance 1/min : + 5

rack travel mm : -12.70
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 245.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -7.20
Tolerance mm : \pm 0.20

Rated speed rpm : 200

CRT mm min. : $>$ -6.60

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : -1.35
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : -4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : -2.40
Tolerance mm : \pm 0.40

START CUT-OUT

Rated speed rpm : $>$ 150
Rated speed rpm : $<$ 230

Check
speed 1/min : $>$ 130
Check
speed 1/min : $<$ 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 93.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed

Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.5

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1310
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 275
rack travel mm : -7.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.95
Test oil : ISO 4113

Combination No. : 0 403 474 016

Injection pump
Pump designation : PES4MW100/720RS1212
EP type number : 0 413 404 114

Governor
Governor design. : RSV350...1300MWOA346
Governor no. : 0 420 085 175

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 102.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.25
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 104.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 350
 Rack travel in mm : 6.40
 Tolerance mm : + 0.40
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 104.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 108.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1500
 rack travel mm : 4.00
 Rated speed rpm : 1425
 rack travel mm : 12.20
 Rated speed rpm : 1353
 Tolerance 1/min : + 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1340
 rack travel mm : 12.25

Rated speed rpm : 1384
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1341
 rack travel mm : 12.25

Rated speed rpm : 1385
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1342
 rack travel mm : 12.25

Rated speed rpm : 1386
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1343
 rack travel mm : 12.25

Rated speed rpm : 1387
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1344
 rack travel mm : 12.25

Rated speed rpm : 1388
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1345
 rack travel mm : 12.25

Rated speed rpm : 1389
 Tolerance 1/min : + 4
 rack travel mm : 4.00

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 6.40

Testing:

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.25
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.25
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 2.55
Tolerance mm : \pm 0.10

Pressure hPa : 200
rack travel mm : 0.85
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : \pm 0.40
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.95
Test oil : ISO 4113
Combination No. : 0 403 476 027
Injection pump
Pump designation : PES6MW100/720RS1144
EP type number : 0 413 406 138
Governor
Governor design. : RSV350...1300MWOA316
: -6
Governor no. : 0 420 085 098
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM366A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

J03

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 10.75
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 73.0
Tolerance
cm3/1000 strokes : ± 1.0
Check tolerance
cm3/1000s. : ± 3.0
Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.30

Tolerance mm : + 0.30

Del. quantity
cm3/1000 strokes : 10.0

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread

Tolerance

cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 73.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spread

Tolerance

cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1450

rack travel mm : 4.00

Rated speed rpm : 1415

rack travel mm : 9.70

Rated speed rpm : 1353

Tolerance 1/min : + 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1340

rack travel mm : 9.70

Rated speed rpm : 1384

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1341

rack travel mm : 9.70

Rated speed rpm : 1385

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1342

rack travel mm : 9.70

Rated speed rpm : 1386

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1343

rack travel mm : 9.70

Rated speed rpm : 1387

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1344

rack travel mm : 9.70

Rated speed rpm : 1388

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1345

rack travel mm : 9.70

Rated speed rpm : 1389

Tolerance 1/min : + 4

rack travel mm : 4.00

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 7.30

Testing:

rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.35
Tolerance mm : \pm 0.05

Rated speed rpm : 825
rack travel mm : 12.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 825

Del. quantity
cm³/1000 strokes : 74.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.30
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.95
Test oil : ISO 4113
Combination No. : 0 403 476 054
Injection pump
Pump designation : PES6MW100/720RS1144
EP type number : 0 413 406 138
Governor
Governor design. : RSV350...1200MWOA316
: -7
Governor no. : 0 420 085 092
Cust. part No. : 0150747302

Customer-spec. information
Customer : MB-NFZ
Motor : OM366A
Power KW : 115.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

J06

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 12.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 81.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0
Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.30

Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 10.0

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring
pre-tension

click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 81.5

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1450

rack travel mm : 4.00

Rated speed rpm : 1340

rack travel mm : 11.00

Rated speed rpm : 1248

Tolerance 1/min : ± 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240

rack travel mm : 11.00

Rated speed rpm : 1289

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1241

rack travel mm : 11.00

Rated speed rpm : 1290

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1242

rack travel mm : 11.00

Rated speed rpm : 1291

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1243

rack travel mm : 11.00

Rated speed rpm : 1292

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1244

rack travel mm : 11.00

Rated speed rpm : 1293

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1245

rack travel mm : 11.00

Rated speed rpm : 1294

Tolerance 1/min : ± 4

rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 7.30
Tolerance mm : + 0.30

rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.05
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 12.55
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 12.20
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 76.5
Tolerance
cm3/1000 strokes : + 1.5
Check tolerance
cm3/1000S. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 83.0
Tolerance
cm3/1000 strokes : + 5.0
Check tolerance
cm3/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.30
Tolerance mm : + 0.30
Del. quantity
cm3/1000 strokes : 10.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.95
Test oil : ISO 4113
Combination No. : 0 403 476 055
Injection pump
Pump designation : PES6MW100/720RS1144
EP type number : 0 413 406 138
Governor
Governor design. : RSV350...1200MWOA316
: -8
Governor no. : 0 420 085 097
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM366A
Power KW : 92.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 9.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance cm ³ /1000S.	: 6.0
Rated speed rpm	: 350
Rack travel in mm	: 6.60
Tolerance mm	: ± 0.30
Del. quantity cm ³ /1000 strokes	: 10.0
Tolerance cm ³ /1000 strokes	: ± 2.0
Check tolerance cm ³ /1000S.	: ± 4.5
Spread Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: ± 0.35
governor spring pre-tension click setting x	: 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1200
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 63.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spread Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 102.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 1.00
Tolerance mm	: ± 0.70
Rated speed rpm	: 1450
rack travel mm	: 4.00
Rated speed rpm	: 1315
rack travel mm	: 8.80
Rated speed rpm	: 1253
Tolerance 1/min	: ± 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 1235
rack travel mm	: 8.80
Rated speed rpm	: 1274
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
Rated speed rpm	: 1236
rack travel mm	: 8.80
Rated speed rpm	: 1275
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
Rated speed rpm	: 1237
rack travel mm	: 8.80
Rated speed rpm	: 1276
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
Rated speed rpm	: 1238
rack travel mm	: 8.80
Rated speed rpm	: 1277
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
Rated speed rpm	: 1239
rack travel mm	: 8.80
Rated speed rpm	: 1278
Tolerance 1/min	: ± 4
rack travel mm	: 4.00
Rated speed rpm	: 1240
rack travel mm	: 8.80
Rated speed rpm	: 1279
Tolerance 1/min	: ± 4

rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 6.60
Tolerance mm : \pm 0.30

rack travel mm : 2.00
Rated speed rpm : 445
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 9.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 10.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.95
Test oil : ISO 4113

Combination No. : 0 403 476 056

Injection pump
Pump designation : PES6MW100/72ORS1144
EP type number : 0 413 406 138

Governor
Governor design. : RSV350...1200MW0A316
: -5
Governor no. : 0 420 085 090

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM366A
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.25
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 70.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.40

Tolerance mm : + 0.30

Del. quantity
cm3/1000 strokes : 10.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure

hPa : -

Del. quantity
cm3/1000 strokes : 70.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1450

rack travel mm : 4.00

Rated speed rpm : 1315

rack travel mm : 9.20

Rated speed rpm : 1248

Tolerance 1/min : + 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240

rack travel mm : 9.20

Rated speed rpm : 1284

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1241

rack travel mm : 9.20

Rated speed rpm : 1285

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1242

rack travel mm : 9.20

Rated speed rpm : 1286

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1243

rack travel mm : 9.20

Rated speed rpm : 1287

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1244

rack travel mm : 9.20

Rated speed rpm : 1288

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1245

rack travel mm : 9.20

Rated speed rpm : 1289

Tolerance 1/min : + 4

rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : \pm 0.30

rack travel mm : 2.00
Rated speed rpm : 445
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.10
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 10.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.06.95
Test oil : ISO 4113
Combination No. : 0 403 476 066
Injection pump
Pump designation : PES6MW100/720RS1130
EP type number : 0 413 406 122
Governor
Governor design. : RSV350...1300MWOA318
: -5
Governor no. : 0 420 085 100
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 83.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 350
 Rack travel in mm : 8.00
 Tolerance mm : ± 0.25
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1280
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 83.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 109.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.00
 Rated speed rpm : 1335
 Tolerance 1/min : ± 5
 rack travel mm : 4.00
 Rated speed rpm : 1415
 Tolerance 1/min : ± 15
 rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1560

LOW IDLE

control lever
 position degree : 79.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 8.00
 Tolerance mm : ± 0.10
 rack travel mm : 2.00
 Rated speed rpm : 500
 Tolerance 1/min : ± 30
 Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1280
 rack travel mm : 11.05
 Tolerance mm : ± 0.05
 Rated speed rpm : 750
 rack travel mm : 11.05
 Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 71.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000s. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 7.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1335
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000s. : ± 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 8.00
Tolerance mm : ± 0.25
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.95
Test oil : ISO 4113
Combination No. : 0 403 476 067
Injection pump
Pump designation : PES6MW100/720RS1131
EP type number : 0 413 406 123
Governor
Governor design. : RSV350...1300MWOA2
Governor no. : 0 420 085 109

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 LA
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 101.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.55
Tolerance mm : ± 0.35

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 101.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : ± 0.70

Rated speed rpm : 1600

rack travel mm : 4.00
Rated speed rpm : 1435

rack travel mm : 11.60
Rated speed rpm : 1343

Tolerance 1/min : ± 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1340
rack travel mm : 11.60

Rated speed rpm : 1391
Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1341
rack travel mm : 11.60

Rated speed rpm : 1392
Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1342
rack travel mm : 11.60

Rated speed rpm : 1393
Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1343
rack travel mm : 11.60

Rated speed rpm : 1394
Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1344
rack travel mm : 11.60

Rated speed rpm : 1395
Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1345
rack travel mm : 11.60

Rated speed rpm : 1396
Tolerance 1/min : ± 4

rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 6.55
Tolerance mm : \pm 0.35

rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.65
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.65
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 1.40
Tolerance mm : \pm 0.10

Pressure hPa : 250
rack travel mm : 0.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.55
Tolerance mm : \pm 0.35
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.95
Test oil : ISO 4113
Combination No. : 0 403 476 077
Injection pump
Pump designation : PES6MW100/72DRS1144
EP type number : 0 413 406 138
Governor
Governor design. : RSV350...1300MWOA3
Governor no. : 0 420 085 126

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 LA
Power KW : 127.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 82.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.55

Tolerance mm : + 0.35

Del. quantity
cm3/1000 strokes : 11.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 82.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 107.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1550

rack travel mm : 4.00

Rated speed rpm : 1445

rack travel mm : 10.60

Rated speed rpm : 1343

Tolerance 1/min : + 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1340

rack travel mm : 10.60

Rated speed rpm : 1401

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1341

rack travel mm : 10.60

Rated speed rpm : 1402

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1342

rack travel mm : 10.60

Rated speed rpm : 1403

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1343

rack travel mm : 10.60

Rated speed rpm : 1404

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1344

rack travel mm : 10.60

Rated speed rpm : 1405

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1345

rack travel mm : 10.60

Rated speed rpm : 1406

Tolerance 1/min : + 4

rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 6.55
Tolerance mm : \pm 0.35

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.65
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 77.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.55
Tolerance mm : \pm 0.35

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.06.95
Test oil : ISO 4113
Combination No. : 0 403 476 081
Injection pump
Pump designation : PES6MW100/720RS1196
: -1
EP type number : 0 413 406 219
Governor
Governor design. : RSV350...1050MWOA338
Governor no. : 0 420 085 138

Cust. part No. :

Customer-spec. information
Customer : LIEBHERR
Motor : D 916 T
Power kW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 049

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 350
 Rack travel in mm : 9.80
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 73.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : ± 0.35
 governor spring
 pre-tension
 click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 1300
 Del. quantity
 cm³/1000 strokes : 151.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 104.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.25
 Rated speed rpm : 1075
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1140
 Tolerance 1/min : ± 10

rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1250

rack travel mm : 4.00
 Rated speed rpm : 1190

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 6.70

Testing:

Rated speed rpm : 350
 rack travel mm : 9.80
 Tolerance mm : ± 0.20

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1050
 rack travel mm : 13.25
 Tolerance mm : ± 0.05

Rated speed rpm : 500
 rack travel mm : 13.25
 Tolerance mm : ± 0.10

Rated speed rpm : 800
 rack travel mm : 13.25
 Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 14.75
Tolerance mm : + 0.25

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1300
rack travel mm : 13.25
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
Tolerance mm : + 0.05

Rated speed rpm : 600

Pressure hPa : 500
rack travel mm : 1.05
Tolerance mm : + 0.10

Pressure hPa : 700
rack travel mm : 1.95
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 150.5
Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 113.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 12.25
Rated speed rpm : 1075
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 9.80
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 73.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.04.95
Test oil : ISO 4113

Combination No. : 0 403 476 097

Injection pump
Pump designation : PES6MW100/720RS1131
: -1
EP type number : 0 413 406 165

Governor
Governor design. : RSV350...1300MWOA342
: -2
Governor no. : 0 420 085 157

Cust. part No. : 0200740002

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 LA
Power KW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 15.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 117.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.40
Tolerance mm : + 0.40

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 117.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 107.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1600

rack travel mm : 4.00
Rated speed rpm : 1475

rack travel mm : 14.60
Rated speed rpm : 1345
Tolerance 1/min : + 5

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1340
rack travel mm : 14.65

Rated speed rpm : 1436
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1341
rack travel mm : 14.65

Rated speed rpm : 1437
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1342
rack travel mm : 14.65

Rated speed rpm : 1438
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1343
rack travel mm : 14.65

Rated speed rpm : 1439
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1344
rack travel mm : 14.65

Rated speed rpm : 1440
Tolerance 1/min : + 4
rack travel mm : 4.00

Rated speed rpm : 1345
rack travel mm : 14.65

Rated speed rpm : 1441
Tolerance 1/min : \pm 4
rack travel mm : 4.00

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 7.40

Testing:

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 15.65
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 15.65
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 15.65
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 3.70
Tolerance mm : \pm 0.10

Pressure hPa : 270
rack travel mm : 1.90

Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 112.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.40
Tolerance mm : \pm 0.40
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.05.95
Test oil : ISO 4113

Combination No. : 0 403 476 105

Injection pump
Pump designation : PES6MW100/720RS1131
EP type number : 0 413 406 123

Governor
Governor design. : RSV350...1200MWOA342
: -8
Governor no. : 0 420 085 171

Cust. part No. : 0210746702

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 114.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 84.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.15
Tolerance mm : \pm 0.35

Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 750
Del. quantity
cm3/1000 strokes : 84.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1450

rack travel mm : 4.00
Rated speed rpm : 1320

rack travel mm : 9.90
Rated speed rpm : 1248
Tolerance 1/min : \pm 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240
rack travel mm : 9.90

Rated speed rpm : 1289
Tolerance 1/min : \pm 4
rack travel mm : 4.00

Rated speed rpm : 1241
rack travel mm : 9.90

Rated speed rpm : 1290
Tolerance 1/min : \pm 4
rack travel mm : 4.00

Rated speed rpm : 1242
rack travel mm : 9.90

Rated speed rpm : 1291
Tolerance 1/min : \pm 4
rack travel mm : 4.00

Rated speed rpm : 1243
rack travel mm : 9.90

Rated speed rpm : 1292
Tolerance 1/min : \pm 4
rack travel mm : 4.00

Rated speed rpm : 1244
rack travel mm : 9.90

Rated speed rpm : 1293
Tolerance 1/min : \pm 4
rack travel mm : 4.00

Rated speed rpm : 1245
rack travel mm : 9.90

Rated speed rpm : 1294
Tolerance 1/min : \pm 4

rack travel mm : 4.00

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 6.15

Testing:

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : + 40

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.95
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 11.75
Tolerance mm : + 0.10

Rated speed rpm : 1000
rack travel mm : 11.10
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 11.75
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : + 0.05

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 1.75
Tolerance mm : + 0.10

Pressure hPa : 300

rack travel mm : 1.15
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 750
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 79.5
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.15
Tolerance mm : + 0.35
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.07.95
Test oil : ISO 4113
Combination No. : 0 403 476 136
Injection pump
Pump designation : PES6MW100/320RS1237
EP type number : 0 413 406 233
Governor
Governor design. : RSV300...1100MW1A353
Governor no. : 0 420 085 223

Cust. part No. :

Customer-spec. information
Customer : VME
Motor : TD61GD
Power KW : 92.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 630 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 106.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm3/1000S. : 6.0
 Rated speed rpm : 315
 Rack travel in mm : 6.50
 Tolerance mm : \pm 0.20
 Del. quantity
 cm3/1000 strokes : 6.0
 Tolerance
 cm3/1000 strokes : \pm 2.0
 Check tolerance
 cm3/1000S. : \pm 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : \pm 0.35
 governor spring
 pre-tension
 click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : -
 Del. quantity
 cm3/1000 strokes : 106.0
 Tolerance
 cm3/1000 strokes : \pm 1.0
 Check tolerance
 cm3/1000S. : \pm 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 114.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.90
 Rated speed rpm : 1140
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00
 Rated speed rpm : 1180
 Tolerance 1/min : \pm 15
 rack travel mm : 1.00
 Tolerance mm : \pm 0.70
 Rated speed rpm : 1250

LOW IDLE

control lever
 position degree : 82.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 315
 rack travel mm : 6.50
 Tolerance mm : \pm 0.10
 Rated speed rpm : 100
 CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 9.90
 Tolerance mm : \pm 0.05
 Rated speed rpm : 500
 rack travel mm : 11.30
 Tolerance mm : \pm 0.10
 Rated speed rpm : 660
 rack travel mm : 10.20
 Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm ³ /1000 strokes	:	107.0
Tolerance		
cm ³ /1000 strokes	:	± 1.5
Check tolerance		
cm ³ /1000S.	:	± 4.0
Spreed		
Tolerance		
cm ³ /1000 strokes	:	5.5
Check tolerance		
cm ³ /1000S.	:	7.0

End of test specification sheet

BREAKAWAY

Rack travel in mm	:	8.90
Rated speed rpm	:	1140
Tolerance 1/min	:	± 5

STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	20.00
Tolerance mm	:	± 1.00
Del. quantity		
cm ³ /1000 strokes	:	90.0
Tolerance		
cm ³ /1000 strokes	:	± 7.0
Check tolerance		
cm ³ /1000S.	:	± 10.0

LOW IDLE

Rated speed rpm	:	315
rack travel mm	:	6.50
Tolerance mm	:	± 0.20
Del. quantity		
cm ³ /1000 strokes	:	6.0
Tolerance		
cm ³ /1000 strokes	:	± 2.0
Check tolerance		
cm ³ /1000S.	:	± 4.5
Spreed		
Tolerance		
cm ³ /1000 strokes	:	3.5
Check tolerance		
cm ³ /1000S.	:	5.5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.95
Test oil : ISO 4113
Combination No. : 0 403 476 138
Injection pump
Pump designation : PES6MW100/720RS1130
: -3
EP type number : 0 413 406 235
Governor
Governor design. : RSV350...1300MWOA318
Governor no. : 0 420 085 052

Cust. part No. : 0250748802

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1280

Rack travel in mm : 10.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 77.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 6.00
Tolerance mm : ± 0.20

Del. quantity
 cm3/1000 strokes : 11.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 6.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1280
 Aneroid pressure
 hPa : -
 Del. quantity
 cm3/1000 strokes : 77.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 107.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.10
 Rated speed rpm : 1325
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1380
 Tolerance 1/min : + 15
 rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1500

LOW IDLE

control lever
 position degree : 78.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
 rack travel mm : 6.00
 Tolerance mm : + 0.10
 rack travel mm : 2.00
 Rated speed rpm : 450
 Tolerance 1/min : + 30
 Rated speed rpm : 100
 CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1280
 rack travel mm : 10.10
 Tolerance mm : + 0.10
 Rated speed rpm : 750
 rack travel mm : 10.50
 Tolerance mm : + 0.10
 Rated speed rpm : 825
 rack travel mm : 10.25
 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 750
 Del. quantity
 cm3/1000 strokes : 74.0
 Tolerance
 cm3/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

BREAKAWAY

Rack travel in mm : 9.10
Rated speed rpm : 1325
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.00
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.05.95
Test oil : ISO 4113
Combination No. : 0 403 476 141
Injection pump
Pump designation : PES6MW100/720RS1144
EP type number : 0 413 406 138
Governor
Governor design. : RSV350...1300MW0A364
Governor no. : 0 420 085 247

Cust. part No. : 0260742002

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 LA
Power KW : 127.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 8.40

Tolerance mm : + 0.35

Del. quantity
cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spread

Tolerance

cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : + 0.35

governor spring

pre-tension

click setting x : 4.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : -

Del. quantity

cm3/1000 strokes : 85.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000S. : + 3.0

Spread

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1550

rack travel mm : 4.00

Rated speed rpm : 1445

rack travel mm : 10.60

Rated speed rpm : 1343

Tolerance 1/min : + 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1340

rack travel mm : 10.60

Rated speed rpm : 1401

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1341

rack travel mm : 10.60

Rated speed rpm : 1402

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1342

rack travel mm : 10.60

Rated speed rpm : 1403

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1343

rack travel mm : 10.60

Rated speed rpm : 1404

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1344

rack travel mm : 10.60

Rated speed rpm : 1405

Tolerance 1/min : + 4

rack travel mm : 4.00

Rated speed rpm : 1345

rack travel mm : 10.60

Rated speed rpm : 1406

Tolerance 1/min : + 4

rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 8.40
Tolerance mm : \pm 0.35

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.65
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.95
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 8.40
Tolerance mm : \pm 0.35
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.06.95

Test oil : ISO 4113

Combination No. : 0 403 476 142

Injection pump

Pump designation : PES6MW100/720RS1239

EP type number : 0 413 406 238

Governor

Governer design. : RSV350...1200MWOA372

Governer no. : 0 420 085 255

Cust. part No. : 0250748902

Customer-spec. information

Customer : MB-NFZ

Motor : OM366LA

Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : ± 1.0

Prestroke mm : 3.65

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.00

Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.30

Tolerance mm : ± 0.05

Del. quantity

cm3/1000 strokes : 67.0

Tolerance

cm3/1000 strokes : ± 1.0

Check tolerance

cm3/1000S. : ± 3.0

Speed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.50

Tolerance mm : ± 0.25

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 67.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1450

rack travel mm : 4.00

Rated speed rpm : 1400

rack travel mm : 11.30

Rated speed rpm : 1250

Tolerance 1/min : ± 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240

rack travel mm : 11.30

Rated speed rpm : 1370

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1241

rack travel mm : 11.30

Rated speed rpm : 1371

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1242

rack travel mm : 11.30

Rated speed rpm : 1372

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1243

rack travel mm : 11.30

Rated speed rpm : 1373

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1248

rack travel mm : 11.30

Rated speed rpm : 1378

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1249

rack travel mm : 11.30

Rated speed rpm : 1379

Tolerance 1/min : ± 4

rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : \pm 0.25

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.06.95
Test oil : ISO 4113
Combination No. : 0 403 476 143
Injection pump
Pump designation : PES6MW100/720RS1239
EP type number : 0 413 406 238
Governor
Governor design. : RSV350...1200MW0A373
Governor no. : 0 420 085 256

Cust. part No. : 0260746002

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 62.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 47.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 7.50

Tolerance mm : ± 0.25

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65

Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 47.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 119.0

RATED SPEED

rack travel mm : 1.00

Tolerance mm : ± 0.70

Rated speed rpm : 1450

rack travel mm : 4.00

Rated speed rpm : 1370

rack travel mm : 9.30

Rated speed rpm : 1250

Tolerance 1/min : ± 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240

rack travel mm : 9.30

Rated speed rpm : 1340

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1241

rack travel mm : 9.30

Rated speed rpm : 1341

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1242

rack travel mm : 9.30

Rated speed rpm : 1342

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1243

rack travel mm : 9.30

Rated speed rpm : 1343

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1248

rack travel mm : 9.30

Rated speed rpm : 1348

Tolerance 1/min : ± 4

rack travel mm : 4.00

Rated speed rpm : 1249

rack travel mm : 9.30

Rated speed rpm : 1349

Tolerance 1/min : ± 4

rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : \pm 0.25

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 10.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : \pm 0.25
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.04.95
Test oil : ISO 4113
Combination No. : 0 402 734 801
Injection pump
Pump designation : PES4P120A120RS7313
EP type number : 0 412 724 801
Governor
Governor design. : RQV400...1250PA1113K
Governor no. : 0 421 815 376

Cust. part No. : 3926603

Customer-spec. information
Customer : CDC
Motor : 4BTA-A
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

× inside diameter : 3.0
× length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Tolerance bar : ± 0.10

Prestroke mm : ± 0.23

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.01.95
Test oil : ISO 4113
Combination No. : 0 401 840 776
Injection pump
Pump designation : PE12P120A520/4LS3854
: -1
EP type number : 0 411 820 730
Governor
Governor design. : RQ900PA1196
Governor no. : 0 421 801 753

Cust. part No. :

Customer-spec. information
Customer : DAEWOO
Motor : D2842LE
Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0
Prestroke mm : 4.25
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 10.50
Tolerance mm : + 1.50
Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 850
Rack travel in mm : 12.50
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.20
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 20.0
Tolerance

cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
rack travel mm : 11.50

Rated speed rpm : 932
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1050

Rated speed rpm : 901
rack travel mm : 11.50

Rated speed rpm : 933
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1050

Rated speed rpm : 902
rack travel mm : 11.50

Rated speed rpm : 934
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1050

Rated speed rpm : 903
rack travel mm : 11.50

Rated speed rpm : 935
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1050

Rated speed rpm : 904
rack travel mm : 11.50

Rated speed rpm : 936
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1050

Rated speed rpm : 905
rack travel mm : 11.50

Rated speed rpm : 937
Tolerance 1/min : + 4

rack travel mm : 4.00
rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1050

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.50
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.09.95
Test oil : ISO 4113

Combination No. : 0 401 846 882

Injection pump
Pump designation : PE6P120A320RS3206-1
EP type number : 0 411 826 775

Governor
Governor design. : RQ750PA783-1
Governor no. : 0 421 801 432

Cust. part No. : 863232 P04 V. 02/95

Customer-spec. information
Customer : VOLVO-PENTA
Motor : TAMD 122 A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 345.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
 Rack travel in mm : 5.00
 Tolerance mm : \pm 0.30
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 757
 guide sleeve
 travel mm : 4.06
 Tolerance mm : \pm 0.25

Rated speed rpm : 510
 guide sleeve
 travel mm : -8.33
 Tolerance mm : \pm 0.25

Rated speed rpm : 860
 guide sleeve
 travel mm : 16.96
 Tolerance mm : \pm 0.25

Rated speed rpm : 814
 guide sleeve
 travel mm : 10.00
 Tolerance mm : \pm 0.25

Rated speed rpm : 870
 guide sleeve
 travel mm : 11.50
 Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : -
 Del. quantity
 cm³/1000 strokes : 345.0
 Tolerance
 cm³/1000 strokes : \pm 1.0

Check tolerance
 cm³/1000S. : \pm 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 88.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.80
 Rated speed rpm : 751
 Tolerance 1/min : \pm 3

rack travel mm : 4.00
 Rated speed rpm : 791
 Tolerance 1/min : \pm 8

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 850

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 748
 rack travel mm : 12.80

Rated speed rpm : 789
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 850

Rated speed rpm : 749
 rack travel mm : 12.80

Rated speed rpm : 790
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 850

Rated speed rpm : 750
 rack travel mm : 12.80

Rated speed rpm : 791
 Tolerance 1/min : \pm 5
 rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 12.80

Rated speed rpm : 792
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 12.80

Rated speed rpm : 793
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 12.80

Rated speed rpm : 794
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : \pm 0.05

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 751
Tolerance 1/min : \pm 3

LOW IDLE

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113

Combination No. : 0 402 646 621

Injection pump
Pump designation : PE6P120A720RS7264
EP type number : 0 412 626 874

Governor
Governor design. : RQ900PA758-16
Governor no. : 0 421 801 685

Cust. part No. : 1337553

Customer-spec. information
Customer : SCANIA
Motor : D 11_

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

L02

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 4.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 850

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 264.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 26.0

tolerance degree : ± 4.0

control lever
position degree : 87.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
rack travel mm : 13.10

Rated speed rpm : 954
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1000

Rated speed rpm : 901
rack travel mm : 13.10

Rated speed rpm : 955
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1000

Rated speed rpm : 902
rack travel mm : 13.10

Rated speed rpm : 956
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1000

Rated speed rpm : 903
rack travel mm : 13.10

Rated speed rpm : 957
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1000

Rated speed rpm : 904
rack travel mm : 13.10

Rated speed rpm : 958
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 13.10

Rated speed rpm : 959
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 14.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 210
rack travel mm : 11.90
Tolerance mm : \pm 0.20

Pressure hPa : 440
rack travel mm : 13.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113

Combination No. : 0 402 646 622

Injection pump
Pump designation : PE6P120A720RS7264
EP type number : 0 412 626 874

Governor
Governor design. : RQ1050PA758-17
Governor no. : 0 421 801 686

Cust. part No. : 1337554

Customer-spec. information
Customer : SCANIA
Motor : D 11_

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

L05

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 4.0

Check tolerance
cm³/1000s. : ± 6.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 850

Rack travel in mm : 14.15
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 264.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1056
guide sleeve
travel mm : 5.06
Tolerance mm : + 0.25

Rated speed rpm : 720
guide sleeve
travel mm : -7.04
Tolerance mm : + 0.25

Rated speed rpm : 1200
guide sleeve
travel mm : 17.59
Tolerance mm : + 0.25

Rated speed rpm : 1125
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1190

guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 264.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 29.0
tolerance degree : + 4.0

control lever
position degree : 90.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1050
rack travel mm : 13.10

Rated speed rpm : 1103
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

Rated speed rpm : 1051
rack travel mm : 13.10

Rated speed rpm : 1104
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

Rated speed rpm : 1052

rack travel mm : 13.10
Rated speed rpm : 1105
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

Rated speed rpm : 1053
rack travel mm : 13.10

Rated speed rpm : 1106
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

Rated speed rpm : 1054
rack travel mm : 13.10

Rated speed rpm : 1107
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

Rated speed rpm : 1055
rack travel mm : 13.10

Rated speed rpm : 1108
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 14.15
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500

rack travel mm : 14.15
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 210
rack travel mm : 11.90
Tolerance mm : + 0.20

Pressure hPa : 440
rack travel mm : 13.45
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000s. : + 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.95
Test oil : ISO 4113
Combination No. : 0 402 648 600
Injection pump
Pump designation : PE8P120A920/4LS7266
: -2
EP type number : 0 412 628 901
Governor
Governor design. : RQ900PA758-20
Governor no. : 0 421 801 689

Cust. part No. : 1371442

Customer-spec. information
Customer : SCANIA
Motor : DSC1457A

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 315.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rack travel in mm : 5.60
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : + 4.0
Check tolerance
cm3/1000S. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 907
guide sleeve
travel mm : 3.98
Tolerance mm : + 0.15

Rated speed rpm : 630
guide sleeve
travel mm : -6.82
Tolerance mm : + 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 17.28
Tolerance mm : + 0.25

Rated speed rpm : 985
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 315.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 28.0
tolerance degree : + 4.0

control lever
position degree : 89.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
rack travel mm : 15.10

Rated speed rpm : 962
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 901
rack travel mm : 15.10

Rated speed rpm : 963
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 902
rack travel mm : 15.10

Rated speed rpm : 964

Tolerance 1/min	: + 5
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1000
Rated speed rpm	: 903
rack travel mm	: 15.10
Rated speed rpm	: 965
Tolerance 1/min	: + 5
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1000
Rated speed rpm	: 904
rack travel mm	: 15.10
Rated speed rpm	: 966
Tolerance 1/min	: + 5
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1000
Rated speed rpm	: 905
rack travel mm	: 15.10
Rated speed rpm	: 967
Tolerance 1/min	: + 5
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1000

TORQUE CONTROL

Rated speed rpm	: 700
rack travel mm	: 16.15
Tolerance mm	: + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm	: 500
Pressure hPa	: 1500
rack travel mm	: 16.15
Tolerance mm	: + 0.05

MEASUREMENT

Pressure hPa	: -
Rated speed rpm	: 500
rack travel mm	: 12.50
Tolerance mm	: + 0.20

Rated speed rpm	: 500
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Pressure hPa	: 420
rack travel mm	: 13.30
Tolerance mm	: + 0.20

Pressure hPa	: 680
rack travel mm	: 15.05
Tolerance mm	: + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	
hPa	: -
Rated speed rpm	: 500
Del. quantity	
cm ³ /1000 strokes	: 221.0
Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0

STARTING FUEL DELIVERY

Rated speed rpm	: 100
rack travel mm	: 12.50
Tolerance mm	: + 0.20
Del. quantity	
cm ³ /1000 strokes	: 130.0
Tolerance	
cm ³ /1000 strokes	: + 20.0
Check tolerance	
cm ³ /1000S.	: + 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113

Combination No. : 0 402 648 944

Injection pump
Pump designation : PE8P120A920/4LS7266
: -1
EP type number : 0 412 628 898

Governor
Governor design. : RQ750PA758-15
Governor no. : 0 421 801 660

Cust. part No. : 1340528

Customer-spec. information
Customer : SCANIA
Motor : DS 14

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.50
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 287.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rack travel in mm : 5.30
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : + 4.0
Check tolerance
cm3/1000S. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 759
guide sleeve
travel mm : 6.36
Tolerance mm : + 0.25

Rated speed rpm : 520
guide sleeve
travel mm : -5.69
Tolerance mm : + 0.25

Rated speed rpm : 850
guide sleeve
travel mm : 16.58
Tolerance mm : + 0.25

Rated speed rpm : 798
guide sleeve
travel mm : 10.00
Tolerance mm : + 0.25

Rated speed rpm : 860
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 287.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 36.0
tolerance degree : + 4.0

control lever
position degree : 88.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 13.90

Rated speed rpm : 799
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 13.90

Rated speed rpm : 800
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 13.90

Rated speed rpm : 801

Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 13.90

Rated speed rpm : 802
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 13.90

Rated speed rpm : 803
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 13.90

Rated speed rpm : 804
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.95
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.95
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 220
rack travel mm : 12.00
Tolerance mm : + 0.20

Pressure hPa : 510
rack travel mm : 13.95
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.00
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000s. : + 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113

Combination No. : 0 402 648 963

Injection pump
Pump designation : PE8P120A920/4LS7266
: -1
EP type number : 0 412 628 898

Governor
Governor design. : RQ900PA758-18
Governor no. : 0 421 801 687

Cust. part No. : 1340530

Customer-spec. information
Customer : SCANIA
Motor : D 14

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 14.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 262.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rack travel in mm : 5.30
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : + 4.0

Check tolerance
cm³/1000S. : + 6.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 262.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 25.0
tolerance degree : + 4.0

control lever
position degree : 87.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900
rack travel mm : 13.40

Rated speed rpm : 955
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 901
rack travel mm : 13.40

Rated speed rpm : 956
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 902
rack travel mm : 13.40

Rated speed rpm : 957
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 903
rack travel mm : 13.40

Rated speed rpm : 958
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 904
rack travel mm : 13.40

Rated speed rpm : 959
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 13.40

Rated speed rpm : 960
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1000

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.45
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 220
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Pressure hPa : 510
rack travel mm : 13.95
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.08.95
Test oil : ISO 4113

Combination No. : 0 402 678 826

Injection pump
Pump designation : PE8P120A320LS7878-1
EP type number : 0 412 628 906

Governor
Governor design. : RSV400...1000P1A589
Governor no. : 0 421 833 449

Cust. part No. : 9275722

Customer-spec. information
Customer : LIEBHERR
Motor : D 9308 TI
Power KW : 330.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 4.75
Tolerance mm : + 0.20

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 6.0

Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure

hPa : 1200

Del. quantity
cm3/1000 strokes : 259.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 940
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 990
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1160

rack travel mm : 4.00
Rated speed rpm : 995

LOW IDLE

control lever
position degree : 76.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.75

Testing:

Rated speed rpm : 400
rack travel mm : 4.75
Tolerance mm : + 0.20

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.30
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 13.30
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 930
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Pressure hPa : 840
rack travel mm : 12.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 940
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.75
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.08.95
Test oil : ISO 4113

Combination No. : 0 402 678 826A

Injection pump
Pump designation : PE8P120A320LS7878-1
EP type number : 0 412 628 906

Governor
Governor design. : RSV400...1000P1A589
Governor no. : 0 421 833 449

Cust. part No. : 9277414

Customer-spec. information
Customer : LIEBHERR
Motor : D 9308 TI-E
Power kW : 330.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 4.75
Tolerance mm : \pm 0.20

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure

hPa : 1200

Del. quantity
cm3/1000 strokes : 259.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 940
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 990
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1160

rack travel mm : 4.00
Rated speed rpm : 995

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.75

Testing:

Rated speed rpm : 400
rack travel mm : 4.75
Tolerance mm : \pm 0.20

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 13.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 930
rack travel mm : 13.10
Tolerance mm : \pm 0.05

Pressure hPa : 840
rack travel mm : 12.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 220.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 940
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.75
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.08.95
Test oil : ISO 4113

Combination No. : 0 402 678 8260

Injection pump
Pump designation : PE8P120A320LS7878-1
EP type number : 0 412 628 906

Governor
Governor design. : RSV400...1000P1A589
Governor no. : 0 421 833 449

Cust. part No. : 9277816

Customer-spec. information

Customer : LIEBHERR
Motor : D 9408 T-E
Power KW : 267.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed	
Tolerance	
cm3/1000 strokes :	5.0
Check tolerance	
cm3/1000S. :	9.0
Rated speed rpm :	400
Rack travel in mm :	4.75
Tolerance mm :	+ 0.20
Del. quantity	
cm3/1000 strokes :	25.0
Tolerance	
cm3/1000 strokes :	+ 3.0
Check tolerance	
cm3/1000S. :	+ 6.0
Spreed	
Tolerance	
cm3/1000 strokes :	6.0
Check tolerance	
cm3/1000S. :	10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring	
pre-tension	
click setting x :	4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	900
Aneroid pressure	
hPa :	1100
Del. quantity	
cm3/1000 strokes :	240.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 4.0
Spreed	
Tolerance	
cm3/1000 strokes :	5.0
Check tolerance	
cm3/1000S. :	9.0

CONTROL LEVER

control lever	
position degree :	100.0

L25

tolerance degree :	+ 4.0
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RATED SPEED

rack travel mm :	11.70
Rated speed rpm :	940
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1000
Tolerance 1/min :	+ 15

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1160

rack travel mm :	4.00
Rated speed rpm :	1020

LOW IDLE

control lever	
position degree :	76.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	3.75

Testing:

Rated speed rpm :	400
rack travel mm :	4.75
Tolerance mm :	+ 0.20

rack travel mm :	2.00
Rated speed rpm :	500
Tolerance 1/min :	+ 30

TORQUE CONTROL

Rated speed rpm :	900
rack travel mm :	12.70
Tolerance mm :	+ 0.05

Rated speed rpm :	500
rack travel mm :	12.70
Tolerance mm :	+ 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1100
rack travel mm : 12.70
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.20
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 810
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Pressure hPa : 710
rack travel mm : 12.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 253.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 940
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.75
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.08.95
Test oil : ISO 4113

Combination No. : 0 402 678 8260

Injection pump
Pump designation : PE8P120A320LS7878-1
EP type number : 0 412 628 906

Governor
Governor design. : RSV400...1000P1A589
Governor no. : 0 421 833 449

Cust. part No. : 9278716

Customer-spec. information
Customer : LIEBHERR
Motor : D 9308 TI-E
Power KW : 340.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 400

Rack travel in mm : 4.75
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1400

Del. quantity
cm³/1000 strokes : 259.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 102.0

L28

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.35
Rated speed rpm : 990
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1065
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1160

rack travel mm : 4.00
Rated speed rpm : 1075

LOW IDLE

control lever
position degree : 77.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 3.75

Testing:

Rated speed rpm : 400
rack travel mm : 4.75
Tolerance mm : ± 0.20

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.35
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 13.35
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400
rack travel mm : 13.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 920
rack travel mm : 12.80
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 11.80
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 273.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 217.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.35
Rated speed rpm : 990
Tolerance 1/min : \pm 5

MD1

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.75
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.08.95
Test oil : ISO 4113

Combination No. : 0 402 678 826E

Injection pump
Pump designation : PE8P120A320LS7878-1
EP type number : 0 412 628 906

Governor
Governor design. : RSV400...1000P1A589
Governor no. : 0 421 833 449

Cust. part No. : 9279387

Customer-spec. information
Customer : LIEBHERR
Motor : D 9308 TI-E
Power KW : 317.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 105
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 3- 5- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 251.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed	
Tolerance	
cm3/1000 strokes :	5.0
Check tolerance	
cm3/1000S. :	9.0
Rated speed rpm :	400
Rack travel in mm :	4.75
Tolerance mm :	+ 0.20
Del. quantity	
cm3/1000 strokes :	26.0
Tolerance	
cm3/1000 strokes :	+ 3.0
Check tolerance	
cm3/1000S. :	+ 6.0
Spreed	
Tolerance	
cm3/1000 strokes :	6.0
Check tolerance	
cm3/1000S. :	10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring	
pre-tension	
click setting x :	4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	900
Aneroid pressure	
hPa :	1200
Del. quantity	
cm3/1000 strokes :	251.0
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 4.0
Spreed	
Tolerance	
cm3/1000 strokes :	5.0
Check tolerance	
cm3/1000S. :	9.0

CONTROL LEVER

control lever	
position degree :	94.0

M03

tolerance degree :	+ 4.0
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RATED SPEED

rack travel mm :	12.00
Rated speed rpm :	940
Tolerance 1/min :	+ 5
rack travel mm :	4.00
Rated speed rpm :	990
Tolerance 1/min :	+ 15
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1160
rack travel mm :	4.00
Rated speed rpm :	995

LOW IDLE

control lever	
position degree :	70.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	400
rack travel mm :	3.75

Testing:

Rated speed rpm :	400
rack travel mm :	4.75
Tolerance mm :	+ 0.20
rack travel mm :	2.00
Rated speed rpm :	500
Tolerance 1/min :	+ 30

TORQUE CONTROL

Rated speed rpm :	900
rack travel mm :	13.00
Tolerance mm :	+ 0.05
Rated speed rpm :	500
rack travel mm :	13.00
Tolerance mm :	+ 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 12.50
Tolerance mm : \pm 0.05

Pressure hPa : 700
rack travel mm : 11.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 263.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 213.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 940
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 400
rack travel mm : 4.75
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.95
Test oil : ISO 4113

Combination No. : 0 402 746 931

Injection pump
Pump designation : PES6P120A320RS7236
EP type number : 0 412 726 848

Governor
Governor design. : RQV275...1000PA1001
: -2
Governor no. : 0 421 813 989

Cust. part No. : CCEP5128A 66-194

Customer-spec. information

Customer : RVI
Motor : MIDR 063540 N/3
Power KW : 283.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 19.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : -7.25
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 74.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spread

Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.0

Rated speed rpm : 600

Rack travel in mm : 13.35
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 290.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 5.0

Spread
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : -8.20
Tolerance mm : + 0.20

Del. quantity
cm3/1000 strokes : 31.0

Tolerance
cm3/1000 strokes : + 2.5

Check tolerance
cm3/1000S. : + 5.0

Spread
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1190

Rack travel in mm : 13.20
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 290.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 5.0

Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 301.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : + 5

rack travel mm : -9.30
Rated speed rpm : 1205
Tolerance 1/min : + 15

rack travel mm : -12.85
Tolerance mm : + 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 247.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -8.20
Tolerance mm : + 0.10

Rated speed rpm : 200
CRT mm max. : < -6.80
Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1000
Tolerance mm : \pm 0.10
Rated speed rpm : 600
rack travel mm : -4.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -3.80
Tolerance mm : \pm 0.30

Rated speed rpm : 500
Pressure hPa : 240
rack travel mm : -2.60
Tolerance mm : \pm 0.20

Pressure hPa : 480
rack travel mm : -0.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 195

Check
speed 1/min : > 80
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300

rack travel mm : -8.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.08.95
Test oil : ISO 4113
Combination No. : 0 403 244 054
Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0 413 204 022
Governor
Governor design. : RQV300...1300MW150
Governor no. : 0 420 083 334

Cust. part No. : 0260747002

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 300
 Rack travel in mm : 3.90
 Tolerance mm : ± 0.30
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 0.91
 Tolerance mm : ± 0.20

Rated speed rpm : 1354
 guide sleeve
 travel mm : 7.15
 Tolerance mm : ± 0.15

Rated speed rpm : 1130
 guide sleeve
 travel mm : 5.40
 Tolerance mm : ± 0.25

Rated speed rpm : 780
 guide sleeve
 travel mm : 3.72
 Tolerance mm : ± 0.25

Rated speed rpm : 1679
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1780
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1475

M10

Rack travel in mm : 10.00
 Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 126.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 105.0

RATED SPEED

rack travel mm : 12.90
 Rated speed rpm : 1345
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1475
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 66.0

Testing:

Rated speed rpm : 300
 rack travel mm : 3.90
 Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.90
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 2.00
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 0.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 124.0

Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.08.95
Test oil : ISO 4113
Combination No. : 0 403 246 050
Injection pump
Pump designation : PES6MW100/720RS1527
EP type number : 0 413 206 026
Governor
Governor design. : RQV300...1300MW132
: -16
Governor no. : 0 420 083 335
Cust. part No. : 0260749302

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

M13

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 3.80
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.01
Tolerance mm : ± 0.20

Rated speed rpm : 1353
guide sleeve
travel mm : 6.70
Tolerance mm : ± 0.15

Rated speed rpm : 1090
guide sleeve
travel mm : 4.70
Tolerance mm : ± 0.25

Rated speed rpm : 690
guide sleeve
travel mm : 2.97
Tolerance mm : ± 0.25

Rated speed rpm : 1683
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1780
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1480

Rack travel in mm : 10.00
Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure

hPa : 1000

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1470
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.80
Tolerance mm : ± 0.10

Rated speed rpm : 200
 CRT mm min. : > 4.10
 Rated speed rpm : 490
 rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1300
 rack travel mm : 13.30
 Tolerance mm : + 0.05

Rated speed rpm : 600
 rack travel mm : 13.30
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000
 rack travel mm : 13.30
 Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 Tolerance mm : + 0.10

Rated speed rpm : 500
 Pressure hPa : 500
 rack travel mm : 3.00
 Tolerance mm : + 0.10

Pressure hPa : 300
 rack travel mm : 1.00
 Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 200
 Check
 speed 1/min : > 80
 Check
 speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1000
 Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 119.0
 Tolerance
 cm³/1000 strokes : + 1.5
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 48.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 12.30
 Rated speed rpm : 1345
 Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 150.0
 Tolerance
 cm³/1000 strokes : + 5.0
 Check tolerance
 cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 300
 rack travel mm : 3.80
 Tolerance mm : + 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spread

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.08.95
Test oil : ISO 4113
Combination No. : 0 403 246 052
Injection pump
Pump designation : PES6MW100/720RS1527
EP type number : 0 413 206 026
Governor
Governor design. : RQV300...1300MW132
: -19
Governor no. : 0 420 083 338
Cust. part No. : 0260749202

Customer spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

M17

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 300
 Rack travel in mm : 3.80
 Tolerance mm : ± 0.20
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.01
 Tolerance mm : ± 0.20

Rated speed rpm : 1353
 guide sleeve
 travel mm : 6.70
 Tolerance mm : ± 0.15

Rated speed rpm : 1090
 guide sleeve
 travel mm : 4.70
 Tolerance mm : ± 0.25

Rated speed rpm : 690
 guide sleeve
 travel mm : 2.97
 Tolerance mm : ± 0.25

Rated speed rpm : 1683
 guide sleeve
 travel mm : 12.00
 Tolerance mm : ± 0.25

Rated speed rpm : 1780
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1480
 Rack travel in mm : 10.00
 Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 118.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0
 Spread
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 119.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30
 Rated speed rpm : 1345
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1470
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1550

LOW IDLE

control lever
 position degree : 74.0
 tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 3.80
 Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm min. : > 4.10
Rated speed rpm : 490
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.30
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 3.00
Tolerance mm : + 0.10

Pressure hPa : 300
rack travel mm : 1.00
Tolerance mm : + 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 3.80
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.08.95
Test oil : ISO 4113
Combination No. : 0 403 246 053
Injection pump
Pump designation : PES6MW100/720RS1527
EP type number : 0 413 206 026
Governor
Governor design. : RQV300...1300MW132
: -20
Governor no. : 0 420 083 339
Cust. part No. : 0260749402

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

M21

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.40
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 130.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Speed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 4.00
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.01
Tolerance mm : ± 0.20

Rated speed rpm : 1354
guide sleeve
travel mm : 6.71
Tolerance mm : ± 0.15

Rated speed rpm : 1090
guide sleeve
travel mm : 4.70
Tolerance mm : ± 0.25

Rated speed rpm : 690
guide sleeve
travel mm : 2.97
Tolerance mm : ± 0.25

Rated speed rpm : 1683
guide sleeve
travel mm : 12.00
Tolerance mm : ± 0.25

Rated speed rpm : 1780
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1480

Rack travel in mm : 10.00
Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 130.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.40
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1480

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.50

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 14.40
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 14.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 14.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.40
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 4.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.08.95
Test oil : ISO 4113
Combination No. : 0 403 274 007
Injection pump
Pump designation : PES4MW100/72DRS1524
EP type number : 0 413 204 021
Governor
Governor design. : RSV350...1200MWOA356
: -2
Governor no. : 0 420 085 273
Cust. part No. : 0260748302

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

M25

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 11.15
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm3/1000S. : 6.0
 Rated speed rpm : 350
 Rack travel in mm : 4.00
 Tolerance mm : + 0.30
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.5
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1400
 Del. quantity
 cm3/1000 strokes : 86.0
 Tolerance
 cm3/1000 strokes : + 1.0
 Check tolerance
 cm3/1000S. : + 3.0
 Spreed
 Tolerance
 cm3/1000 strokes : 3.5
 Check tolerance
 cm3/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 103.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.15
 Rated speed rpm : 1245
 Tolerance 1/min : + 5

rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1400

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
 rack travel mm : 4.00

Testing:

Rated speed rpm : 100
 CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1200
 rack travel mm : 11.15
 Tolerance mm : + 0.05

Rated speed rpm : 750
 rack travel mm : 11.15
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1400
 rack travel mm : 11.15
 Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500
 Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 250
 rack travel mm : 0.25

Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 71.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.15
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 4.00
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.08.95
Test oil : ISO 4113
Combination No. : 0 403 276 013
Injection pump
Pump designation : PES6MW100/720RS1527
EP type number : 0 413 206 026
Governor
Governor design. : RSV350...1200MWOA390
Governor no. : 0 420 085 276
Cust. part No. : 0260749002

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1
Test oil inlet temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde assembly : 1 688 901 101
Opening pressure bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.55
Tolerance mm : + 0.05
Check tolerance mm : + 0.10
Rack travel in mm : 20.00
Tolerance mm : + 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1200
Rack travel in mm : 13.30
Tolerance mm : + 0.05
Del. quantity cm3/1000 strokes : 118.0
Tolerance cm3/1000 strokes : + 1.0
Check tolerance cm3/1000S. : + 3.0
Spreed Tolerance cm3/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350

Rack travel in mm : 3.90
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 1.00
Tolerance mm : ± 0.70

Rated speed rpm : 1450

rack travel mm : 4.00
Rated speed rpm : 1375

rack travel mm : 12.30
Rated speed rpm : 1245

Tolerance 1/min : ± 5

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240
rack travel mm : 12.30

Rated speed rpm : 1366
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1241
rack travel mm : 12.30

Rated speed rpm : 1367
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1242
rack travel mm : 12.30

Rated speed rpm : 1368
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1243
rack travel mm : 12.30

Rated speed rpm : 1369
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1244
rack travel mm : 12.30

Rated speed rpm : 1370
Tolerance 1/min : ± 4
rack travel mm : 4.00

Rated speed rpm : 1245
rack travel mm : 12.30

Rated speed rpm : 1371
Tolerance 1/min : ± 4

rack travel mm : 4.00

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 3.90

Testing:

rack travel mm : 2.00
Rated speed rpm : 430
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 13.30
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 13.30
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.30
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : + 0.10

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 3.00
Tolerance mm : + 0.10

Pressure hPa : 300
rack travel mm : 1.20
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : + 5.0
Check tolerance
cm³/1000S. : + 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 3.90
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.08.95
Test oil : ISO 4113
Combination No. : 0 403 446 158
Injection pump
Pump designation : PES6MW100/720RS1131
EP type number : 0 413 406 123
Governor
Governor design. : RQV300...1300MW50-1
Governor no. : 0 420 083 089

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 366 LA
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 12.25
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance cm3/1000S.	: 6.0
Rated speed rpm	: 300
Rack travel in mm	: 6.80
Tolerance mm	: + 0.20
Del. quantity cm3/1000 strokes	: 11.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000S.	: + 4.5
Spread Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve travel mm	: 1.40
Tolerance mm	: + 0.25

Rated speed rpm	: 1354
guide sleeve travel mm	: 8.68
Tolerance mm	: + 0.25

Rated speed rpm	: 881
guide sleeve travel mm	: 5.02
Tolerance mm	: + 0.25

Rated speed rpm	: 363
guide sleeve travel mm	: 2.05
Tolerance mm	: + 0.25

Rated speed rpm	: 413
guide sleeve travel mm	: 2.44
Tolerance mm	: + 0.25

Rated speed rpm	: 500
guide sleeve travel mm	: 2.99
Tolerance mm	: + 0.25

Rated speed rpm	: 1600
guide sleeve travel mm	: 11.50

Tolerance mm	: + 0.50
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GUIDE SLEEVE POSITION

Rated speed rpm	: 1340
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Rack travel in mm	: 16.50
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1300
Aneroid pressure hPa	: 700
Del. quantity cm3/1000 strokes	: 97.5
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 3.0
Spread Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 118.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.20
Rated speed rpm	: 1345
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1455
Tolerance 1/min	: + 15

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1550

LOW IDLE

control lever position degree	: 82.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : $>$ 7.60

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 575
rack travel mm : 12.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.25
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : ~
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 225
rack travel mm : 1.40
Tolerance mm : \pm 0.10

Pressure hPa : 170
rack travel mm : 0.40
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 575
Del. quantity
cm³/1000 strokes : 84.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000s. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.08.95
Test oil : ISO 4113
Combination No. : 0 403 474 019
Injection pump
Pump designation : PES4MW100/720RS1151
EP type number : 0 413 404 104
Governor
Governor design. : RSV350...1200MWOA346
: -3
Governor no. : 0 420 085 179

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM 364 A
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 88.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 6.0
 Rated speed rpm : 350
 Rack travel in mm : 6.40
 Tolerance mm : + 0.40
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.65
 Tolerance mm : + 0.35
 governor spring
 pre-tension
 click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 88.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 108.0

N09

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 1.00
 Tolerance mm : + 0.70
 Rated speed rpm : 1450
 rack travel mm : 4.00
 Rated speed rpm : 1340
 rack travel mm : 10.50
 Rated speed rpm : 1248
 Tolerance 1/min : + 8

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1240
 rack travel mm : 10.50

Rated speed rpm : 1289
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1241
 rack travel mm : 10.50

Rated speed rpm : 1290
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1242
 rack travel mm : 10.50

Rated speed rpm : 1291
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1243
 rack travel mm : 10.50

Rated speed rpm : 1292
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1244
 rack travel mm : 10.50

Rated speed rpm : 1293
 Tolerance 1/min : + 4
 rack travel mm : 4.00

Rated speed rpm : 1245
 rack travel mm : 10.50

Rated speed rpm : 1294
 Tolerance 1/min : + 4
 rack travel mm : 4.00

LOW IDLE

Testing:

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : \pm 0.40

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.40
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 375
rack travel mm : 1.70
Tolerance mm : \pm 0.10

Pressure hPa : 200
rack travel mm : 0.50
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : \pm 0.40
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.09.95
Test oil : ISO 4113
Combination No. : 0 400 864 088
Injection pump
Pump designation : PES4A85D410/3RS2799
EP type number : 0 410 884 944
Governor
Governor design. : RSV325...1250A2C2253
: -2L
Governor no. : 0 420 232 556
Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : BF4L913
Power kW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

N12

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 3- 4- 2
Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1250
Rack travel in mm : 11.75
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 84.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 7.0
Rated speed rpm : 325

Rack travel in mm : 7.70
 Tolerance mm : + 0.10
 Del. quantity
 cm3/1000 strokes : 15.0
 Tolerance
 cm3/1000 strokes : + 2.0
 Check tolerance
 cm3/1000S. : + 4.0
 Spreed
 Tolerance
 cm3/1000 strokes : 4.5
 Check tolerance
 cm3/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : + 0.20
 governor spring
 pre-tension
 click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 84.5
 Tolerance
 cm3/1000 strokes : + 0.5
 Check tolerance
 cm3/1000S. : + 2.5
 Spreed
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 102.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70
 Rated speed rpm : 1295
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1375
 Tolerance 1/min : + 15

rack travel mm : 0.85
 Tolerance mm : + 0.55
 Rated speed rpm : 1525

rack travel mm : 4.00
 Rated speed rpm : 1415

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 7.20

Testing:

Rated speed rpm : 325
 rack travel mm : 7.70
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 580
 Tolerance 1/min : + 30

Rated speed rpm : 100
 CRT mm min. : > 19.50

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 11.75
 Tolerance mm : + 0.05

Rated speed rpm : 500
 rack travel mm : 12.15
 Tolerance mm : + 0.05

Rated speed rpm : 800
 rack travel mm : 12.00
 Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 11.50
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 520
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 81.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 59.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 10.70

Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.80
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 7.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.09.95
Test oil : ISO 4113
Combination No. : 0 400 866 080
Injection pump
Pump designation : PES6A85D410/3RS2415
EP type number : 0 410 886 915
Governor
Governor design. : RSV325...1400A8C809L
Governor no. : 0 420 232 610

Cust. part No. : 0423 1249 KY 0150
: -17

Customer-spec. information
Customer : KHD
Motor : BF6L913
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 76.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 325
 Rack travel in mm : 8.00
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 12.5
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
 Rack travel in mm : 0.50
 Tolerance mm : \pm 0.20
 governor spring
 pre-tension
 click setting x : 5.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 76.5
 Tolerance
 cm³/1000 strokes : \pm 0.5
 Check tolerance
 cm³/1000S. : \pm 2.5
 Spread
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 7.0

CONTROL LEVER

control lever
 position degree : 119.0

RATED SPEED

rack travel mm : 9.80
 Rated speed rpm : 1445
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1485
 Tolerance 1/min : \pm 15

rack travel mm : 0.85
 Tolerance mm : \pm 0.55
 Rated speed rpm : 1600

rack travel mm : 4.00
 Rated speed rpm : 1520

LOW IDLE

control lever
 position degree : 68.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 7.50

Testing:

Rated speed rpm : 325
 rack travel mm : 8.00
 Tolerance mm : \pm 0.10

rack travel mm : 2.00
 Rated speed rpm : 630
 Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

TORQUE CONTROL

Rated speed rpm : 1400
 rack travel mm : 10.85
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 rack travel mm : 12.05
 Tolerance mm : \pm 0.05

Rated speed rpm : 1040
 rack travel mm : 11.50
 Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 95
rack travel mm : 10.70
Tolerance mm : \pm 0.10

Pressure hPa : 360
rack travel mm : 11.75
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 45.5
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1445
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 17.20
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 8.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.09.95
Test oil : ISO 4113

Combination No. : 0 400 866 221

Injection pump
Pump designation : PES6A95D410/3RS2876
EP type number : 0 410 896 886

Governor
Governor design. : RSV325...900A7C720L
Governor no. : 0 420 232 339

Cust. part No. : 0 423 1366 KY0150
: -17

Customer-spec. information
Customer : KHD
Motor : BF6L913C
Power KW : 102.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 92.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 6.80

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 92.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.10

Rated speed rpm : 945

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 965

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1100

rack travel mm : 4.00

Rated speed rpm : 985

LOW IDLE

control lever
position degree : 66.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 6.30

Testing:

Rated speed rpm : 325

rack travel mm : 6.80

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 400

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 13.10

Tolerance mm : ± 0.05

Rated speed rpm : 600

rack travel mm : 13.15

Tolerance mm : ± 0.05

BREAKAWAY

Rack travel in mm : 12.10
Rated speed rpm : 945
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
rack travel mm : 6.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.09.95

Test oil : ISO 4113

Combination No. : 0 401 846 545

Injection pump

Pump designation : PE6P110A32ORS494-1

EP type number : 0 411 816 168

Governor

Governer design. : RQV300...1200PA1184

Governer no. : 0 421 814 112

Cust. part No. : 11030926 P02 V.02/95

Customer-spec. information

Customer : VME

Motor : TD71K

Power KW : 148.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.05

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.80

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 117.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.12
Tolerance mm : + 0.25

Rated speed rpm : 1256
guide sleeve
travel mm : 8.57
Tolerance mm : + 0.25

Rated speed rpm : 905
guide sleeve
travel mm : 5.37
Tolerance mm : + 0.25

Rated speed rpm : 435
guide sleeve
travel mm : 2.03
Tolerance mm : + 0.25

Rated speed rpm : 485
guide sleeve
travel mm : 2.43
Tolerance mm : + 0.25

Rated speed rpm : 590
guide sleeve
travel mm : 3.11

Tolerance mm : + 0.25

Rated speed rpm : 1490
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1340

Rack travel in mm : 10.00
Tolerance mm : + 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 117.0
Tolerance

cm³/1000 strokes : + 1.0
Check tolerance

cm³/1000S. : + 3.0

Speed
Tolerance

cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 48.0
tolerance degree : + 4.0

control lever
position degree : 107.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 1245
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1335
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

control lever
position degree : 13.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : \pm 0.20

Rated speed rpm : 200

CRT mm min. : $>$ 6.70

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.80
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.80
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.60
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 1.90
Tolerance mm : \pm 0.10

Pressure hPa : 200
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1245
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.09.95
Test oil : ISO 4113
Combination No. : 0 401 846 865
Injection pump
Pump designation : PE6P120A320RS3202
EP type number : 0 411 826 769
Governor
Governor design. : RQV300...1025PA657
: -23
Governor no. : 0 421 813 669
Cust. part No. : 11031515
: -PD4 v.12/88

Customer-spec. information

Customer : VME
Motor : TD122A 35

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 457 413 010
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 12.05
Tolerance mm : ± 0.05
Del. quantity
cm3/1000 strokes : 209.0
Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1080

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 209.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.05
Rated speed rpm : 1085
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1155
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : + 0.20

Rated speed rpm : 100

CRT mm min. : > 6.50

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.05
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.05
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 11.60

Tolerance mm : \pm 0.20
Rated speed rpm : 500
Pressure hPa : 450
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Check tolerance
cm³/1000s. : 7.0

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 194.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.05
Rated speed rpm : 1085
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0